I AND THOU: A HOLISTIC INVESTIGATION OF COLLEGE MUSIC PERFORMANCE MAJORS' RELATIONSHIPS WITH THEIR INSTRUMENTS

BY

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Submitted to the faculty of the
Jacobs School of Music in partial fulfillment
of the requirements for the degree,
Master of Music Education
Indiana University
June 30, 2017

Accepted by the faculty of the Jacobs School of Music, Indiana University, in partial fulfillment of the requirements for the degree of Master of Music Education.

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Brenda Brenner

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For Elliot

AMDG

Acknowledgements

The production of this document would not have been possible without the support and guidance of several other people. This project became considerably richer with the generous and inexhaustible advice from my research director, Dr. Strand. Every page benefitted from her comments and suggestions. I would also like to thank my committee, Drs. Brenner and Diaz, for their thoughtful revisions and additions to this document.

I would like to express my appreciation for my performance teacher and mentor, Susan Moses, for her unending support and care for my musical and pedagogical development over the past several years. So much of my teaching and research comes from years of study with her, and I would not have completed this project without her.

This final report entirely depended on my five participants, who gave generously gave their time and their thoughtful insights about their musical lives. I am infinitely grateful for their openness with a complete stranger and their willingness to contribute to music education research.

I would not be engaged with research in the first place without each and every one of my own students. No matter their age or the teaching context in which we met, my students have always challenged me to make each lesson better than the last. Knowing them has inspired me to seek out ways to make their musical lives richer.

This document would absolutely not exist in its current form without the phenomenal care of Dr. Heather Dukes. Her persistence and dedication to my recovery from two brain injuries was essential to my ability to produce this thesis.

Finally, I must thank my parents. Both researchers, educators, and psychologists, their vocations are founded on understanding of and compassion for other people. The dinner table conversations we have had throughout my entire life have instilled a devotion to the endless quest for kindness and consideration in every aspect of my life.

Abstract

The purpose of this study was to explore the relationships between musician and instrument among musicians who are undergraduate students at a high-performing university school of music and who have experienced some degree of success on their instruments. In the context of semi-structured interviews, five freshman and sophomore music performance students explored issues relating to their relationships with their instruments and constructed a narrative of their musical life. Themes across participants included thinking of the instrument as more of a person than an object, being dynamic and changing over time, as well as having a personality and limitations. The musician-instrument relationship also appeared to be related to the development of an instrument-specific identity (e.g. "violinist") and factored into how the musicians perceived connection with the audience during performance.

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Chapter One: Statement of the Problem

As experienced educators know, each student is a unique, complex individual who requires personal engagement with and connection to their teachers. Music educators, especially studio teachers, often work closely with students with the goal of mastering a wide variety of skill sets that result in a musical work of art. Due to the nature of a physical musical instrument, instrumental musicians rely on a variety of complicated physical and mental skill sets that require years of training. The intricacy of these skill sets and the process of honing them contribute to the complexity of the instrumental music student's inner world. As music educators, we are constantly developing connections with students over the course of our teaching careers, and these complicated relationships are based on understanding one another.

To address the question of how we as human beings understand other people who are as equally complicated as ourselves, I lay a framework based on dialogic self theory, Martin Buber's (1923/1958) *I and Thou*, and the concept of relational capacities as described by Lysaker, Tonge, Gauson, and Miller (2011) to illustrate some ideas concerning connection to other people. Next, I discuss a variety of personal and social elements that contribute to the complicated inner worlds of instrumental music students as described in previous research. The literature demonstrates conflicting ideas about these factors and the implications they may have for instrumental musicians. Researchers have described the cognitive process of how people turn objects into tools or instruments (Verillon & Andreucci, 2005), while others argue for a more social construction; for example, Doubleday (2008) suggested that gender and gendered relationships may influence how instrumental musicians craft their own relationships. Others still suggest

that instruments themselves get in the way of musical performance (Simoens & Tervaniemi, 2008). Finally, I address these contradictions and the lack of research focusing specifically on a relationship central to the experience of instrumental music students—the relationship between musicians and their instruments.

Theoretical Framework

The lens through which I will conduct this study views the self as a multiplicity of voices crafted by the relationships the self forms with others. Just as exposure to the narrative of other people has the capacity to change one's self (Buber, 1923/1958), the ability to understand the inner worlds of other people is central to forming connections and relationships.

Dialogic self theory. Humans are intrinsically relational beings, and dialogic self theory conceptualizes the self as "an ongoing conversation of voices" (Lysaker et al., 2011, p. 524), contextualized by the languages and relationships one experiences over time. Hermans (2003) describes the dialogic self as an internal multiplicity of voices, all of which are part of one's self and which converse freely. The multivocal self is capable of conversations across time, as past, present, and imagined future selves interact and dialogue with one another. The dialogic self is itself shaped by the connections it forms with others' selves. Lysaker, et al. (2011) related this conceptualization to the writings of Heidegger (as cited in Lysaker, 2011), stating that "to be in the world, in the first place, is to be in relation, that a quality of our self *is* the presence of the other" (p. 524).

I and Thou. Martin Buber's *I and Thou* (1923/1958) addressed the variety of relationships we form with other people and objects. As cited in Bresler (2006), "the self is touched and changed in relation to people and things," (p. 25), a relationship which

Buber called I-Thou. This type of relationship indicates that I am changed by the person or object ("Thou"), and that person or object changes me. Opposing the I-Thou relationship is the I-It relationship, a didactic connection in which mutual shaping (Bresler, 2006) does not take place. An I-Thou relationship can be the connection between a person and a physical object that has developed over time to become dynamic, reflexive, and capable of influencing a person's life over a long period of time.

Relational capacity. As defined by Lysaker et al. (2011), *relational capacity* refers to the set of concepts described by a variety of scholars and disciplines that address our ability and need to connect with others. Lysaker, et al. liken relational capacities to other human potentials, including the capacity to learn and to love, both of which are "embodied and sensitive to the influence of language and social interaction" (p. 524).

Social imagination, also referred to as *theory of mind*, refers to the ability to infer the inner states of other people and predict their behavior based on those inferences (Premack & Woodruff, 1978). Colloquially, this ability is generally known as empathy, as individuals with social imagination are able to understand what others may be feeling and thinking. Researchers (Baron-Cohen, Leslie, & Frith, 1985; Lysaker, et al., 2011) have suggested that this ability is essential for the development of healthy social skills, as individuals who do not have theory of mind are unable to predict what other people will do.

Personal and Social Elements

I now turn to the social and personal elements at play in instrumental musicians' lives that contribute to their multivocal and complex inner worlds, and explore the aspects of peoples' lives that impact their experience of instrumental music. A variety of

social constructions and personal phenomena have already been explored in the context of instrumental music education. These elements include gender (Abeles, 2009; Abeles & Porter, 1978; Conway, 2000; Doubleday, 2008; O'Neill & Boulton, 1996; Tarnowski, 1993), culture (Abril, 2009; Cope & Smith, 1997; Dawe, 2003), socioeconomic status (Albert, 2006; Corenblum & Marshall, 1998; Klinedinst, 1991; McCarthy, 1980), home life (Feintuch, 1983; McPherson & Davidson, 2002; Zdzinski, 1992), psychology (Salmon, 1990; Valentine, 2002; Verillon & Andreucci, 2005), embodiment (Clarke, 2012; Nijs, Lesaffre, & Leman, 2009; Richerme, 2015), physical wellbeing (Fishbein & Middlestadt, 1987; Fry, 1986, 1987; Ranelli, Straker, & Smith, 2008; Spahn, Strukely, & Lehmann, 2004), and professional wellbeing (Simoens & Tervaniemi, 2012).

Research has found that musical instruments are often gendered: certain instruments are considered feminine while others are considered masculine (Abeles & Porter, 1978; Abeles, 2009; O'Neill & Boulton, 1996). These associations may influence a student's choice of instrument (Tarnowski, 1993), and musicians who oppose these gender associations by playing an instrument opposite to their own gender often face social difficulties (Conway, 2000). These difficulties faced by musicians who play an oppositely-gendered instrument may cause a strained relationship between musician and instrument (Doubleday, 2008). The culture surrounding instrumental musicians also influences their engagement with instrumental music. Cultures imbue musical instruments with meaning (Dawe, 2003), and instrumental music education happens in different ways depending on the cultural context in which it takes place (Abril, 2009; Cope & Smith, 1997).

Socioeconomic status (SES) is defined by Bornstein & Bradley (2003) as the relative position of individuals, families, or groups in stratified social systems where some societal values (e.g., occupational prestige, education) are not uniformly distributed. The SES of music students may limit their ability to participate in instrumental music due to financial cost associated with musical instruments (Albert, 2006). SES is associated with student dropout and retention (Klinedinst, 1991; McCarthy, 1980) and predicts parental support (Corenblum & Marshall, 1998) as well as students' overall attitude toward music (Klinedinst, 1991).

Home life also plays a role in instrumental music education. Zdzinski (1992) showed that perceived parental involvement is not strongly related to music achievement, but the role of parents in the first year of instrumental music learning is highly influential on student's experience (McPherson & Davidson, 2002). The presence of music as routine activity in the home can influence a person's continued music-making throughout their life (Feintuch, 1983).

Psychological theories of human interaction with non-musical instruments of all kinds suggest that people can have dialogic and mutually shaping relationships with objects (Rabardel, 1995; Verillon & Andreucci, 2005). This relationship can become destructive if the person develops negative psychological complexes related to that instrument; in the music world this can manifest as music performance anxiety (Salmon, 1990; Valentine, 2002). Embodiment in instrumental music education refers to the inseparability of mind and body during a musical experience (Richerme, 2015). A feeling of oneness with one's instrument is common among musicians, and this feeling allows complete embodiment in musical performance (Nijs, Lesaffre, & Leman, 2009).

The physical health of instrumental musicians can disrupt embodiment during musical performance. Many professional musicians report being injured (Fishbein, et al., 1988), and students at both the college and beginners' level of instrumental music report injury, including injury that affects performance (Ranelli, Straker, & Smith; Fry, 1986; Spahn, Strukely, & Lehmann, 2004; Fry, 1987). While the musician-instrument relationship has yet to be explored holistically, the type of relationship a professional musician has with his or her instrument is related to both physical and mental wellbeing (Simoens & Tervaniemi, 2012).

These social and personal elements have been thoroughly investigated as to their relationship to instrumental music and to the experience of instrumental music education, and this literature will be extensively reviewed in the next chapter. Very little research, however, has centered specifically on the relationship between musician and instrument.

Purpose Statement

The purpose of this study is to explore the relationships between musician and instrument among musicians who are undergraduate students at a high-performing university school of music and who have experienced some degree of success on their instruments. By engaging with the life stories told by these students, I hope to draw a holistic picture of this relationship.

My research questions are as follows:

- How do these music students' relationships with their instruments develop?
- What role do these relationships play in these music students' life stories?

Definition of Terms

Social imagination (theory of mind): the ability to infer the inner states of other people and predict their behavior based on those inferences (Premack & Woodruff, 1978)

Relational capacity: the set of concepts described by a variety of scholars and disciplines that address our ability and need to connect with others (Lysaker, et al., 2011)

Socioeconomic status: the relative position of individuals, families, or groups in stratified social systems where some societal values (e.g., occupational prestige, education) are not uniformly distributed (Bornstein & Bradley, 2003)

Delimitations and Limitations

The use of qualitative methods instead of quantitative allows me to follow freely the stories that are told by participants. Additionally, the focus of the study is the musician-instrument relationship, which may look very different across participants. Since so little is known about this relationship, providing a holistic picture of what the relationship looks like for different people yields a rich and detailed result that is difficult to quantify. Due to the nature of qualitative methodology, the results of this study are not generalizable to a population beyond the participants themselves.

Chapter Two: Review of Literature

Instrumental music education is a field made inaccessible by a variety of social, physical, and psychological factors (Jorgensen, 2007). Each of these factors has an impact on the music learning experience of instrumental music students, and they may influence the relationships instrumental music students form with their instruments. Research has focused on the following areas with regard to their roles in instrumental music education: social constructs, the home and family, the mind and body, and professional well-being.

Social Constructs

Gender. Multiple studies have shown that people associate gender types to musical instruments (Abeles, 2009; Abeles & Porter, 1978; O'Neill & Boulton, 1996; Tarnowski 1993; Conway 2000; Doubleday 2008). Many of these studies (Abeles, 2009; Abeles & Porter, 1978; O'Neill & Boulton, 1996; Tarnowski 1993) are mostly quantitative and involve large numbers of participants, while others are qualitative (Conway, 2000) and ethnomusicological (Doubleday, 2009).

Abeles and Porter (1978) conducted a series of studies to explore gender associations with musical instruments in both adults and children and to identify potential causes for these associations. Abeles and Porter described the gendered nature of the music profession, citing the predominance of sex-discriminant instrumental ensembles like the primarily male marching band and the primarily female orchestral programs, the low percentage of female music teachers, and influence of gender association on child instrument choice.

Abeles & Porter's (1978) first study was conducted in order to "determine the extent of musical instrument sex-stereotyping in adults" (p. 66). Adults from the local community (N = 149) responded to a survey which asked for their age, sex, and previous instrumental music training and posed a hypothetical question about which instruments the participant might encourage their child to study. Half of the surveys began this question with "your fifth-grade son," and half began with "your fifth-grade daughter," and participants were given a choice of eight instruments—cello, clarinet, drums, flute, saxophone, trombone, trumpet, and violin—and asked to identify which instruments would be their first, second, and third choices for their child. Data were analyzed quantitatively using Multivariate Analysis of Variance (MANOVA) and the univariate examination indicated that "respondents preferred clarinet, flute, and violin for their daughters, and drums, trombone, and trumpet for their sons" (Abeles & Porter, 1978, p. 67); results for cello and saxophone were non-significant.

In the second study, Abeles and Porter asked university students (N = 58) to rank eight instruments from most masculine to least masculine. Both music major (n = 32) and non-music major (n = 26) participants were given the Musical Instruments Paired-Comparison Survey Form (MIPCSF), a form with all possible pairs of the eight instruments and asked to circle the instrument in each pair that they considered more masculine. Both groups rated flute, violin, and clarinet as least masculine and trombone, drums, and trumpet as most masculine. Similar to the first study, cello and saxophone were placed in the middle of the scale, indicating no strong association with masculinity.

In the third study, Abeles & Porter (1978) gave a survey of instrument preference to children in kindergarten through fifth grade (N = 598) to determine the age at which

gender associations with musical instrument form. In order to prepare the children for their participation in the study, the authors presented both visual and aural material to familiarize children with the eight instruments used in the survey. The survey itself included drawings and the name of each instrument. To administer the survey, the researchers played an audio clip of each instrument while displaying a picture of the instrument. Female students consistently preferred masculine-associated instruments less than male students in kindergarten through grade eight. Kindergarten male and female students' normalized gender score differed by just .17, while fifth grade student's scores differed by 1.4, suggesting that gender associations with musical instruments are not strong in young children but develop over time.

Abeles and Porter (1978) designed the fourth and final study to determine if the manner in which children are introduced to musical instruments causes the increased gender associations in instrument preference over time. Participants ($N = 47$) were children aged three to five randomly sorted into three groups. Group 1 introduced children to musical instruments through the RCA recording "Instruments of the Orchestra" while simultaneously viewing the same set of instrument pictures from the previous study. Group 2 received the same presentation as the participants in the previous study. Group 3 was presented with recorded examples and pictures from Bowmar's "Meet the Instruments" materials; the pictures included photographs of children playing the instruments. After about 10 minutes of presentation, children were asked to circle the instrument they most preferred. Results showed that while young girls' musical instrument preference was generally not affected by the manner of presentation, young boys responded differently when given the unbiased presentation than the biased

presentation. The findings of each of the above studies by Abeles and Porter (1978) suggest that association of gender musical instruments exists in the general population, including children of all age groups, and that these gender associations may influence the instrument preference of children selecting instruments to study.

Abeles (2009) produced a two-part study in order to determine if gender associations with musical instruments remained over time. Abeles (2009) gave college students (N = 180) the same MIPCSF measure as his study with Porter in 1978. Faculty at music schools across the United States surveyed both music majors (n = 90) and non-music majors (n = 90). The data were converted to normalized scale scores, one set of NSS for music majors and one set for non-music majors. The rank orders of music and non-music majors were almost identical (r_s = .962). Results showed that the rank order of the same eight instruments was identical to the rank order found by Abeles and Porter (1978) indicating that gender associations have remained much the same over 30 years. However, Abeles (2009) acknowledged that the samples differed between the 1978 and 2009 study, which may have affected the reliability of the results.

In Abeles' (2009) second study, researchers collected data of instrumental music students (N = 2,001) in middle schools across the United States in order to determine the gender of students playing each of the eight instruments presented on the MIPCSF. Female students represented 57.3% of the total students surveyed. Analysis of the data showed that 82.3% of girls played musical instruments rated more feminine in previous studies, while 72.7% of boys played musical instruments rated more masculine in previous studies. However, "boys were slightly more likely to play a stereotypical female instrument (a little more than 20% played flute, violin, or clarinet) than girls were to play

a stereotypical male instrument (about 10% of the girls played trombone, trumpet, or drums)" (p. 132).

Abeles (2009) converted the data to a normalized scale score and reduced the number of instruments to six (flute, clarinet, saxophone, trombone, trumpet, drums). Abeles reported that 74.6% of girls (n = 509) played flute or clarinet and 71.4% of boys (n = 501) played trombone, trumpet, or drums. Abeles concluded that gender associations with musical instruments has changed little over time, and music students still generally selected instruments whose gender association aligned with their own gender. While the percentage of students playing a musical instrument not associated with their own gender increased over time, Abeles questioned the meaningfulness of that increase.

O'Neill and Boulton (1996) interviewed British children (N = 153), both male (n = 81) and female (n = 72), about instrument preference in order to determine whether the difference in instrument preference between girls and boys was as strong as reported by previous studies. Participating children viewed an array of six pictures of musical instruments (flute, violin, drum, trumpet, piano, and guitar) and asked to first name each instrument, then rank the instruments shown from the one they would like most to learn to play to the one they would like least to learn to play. Researchers later asked the children if any of the six instruments shown earlier in the interview should not be played by girls and if any instruments should not be played by boys. For both of the previous interview items, children were given the opportunity to explain why they answered the way they did. Children were also asked if they were currently studying a musical instrument.

The results showed that girls showed greater interest than boys in playing the flute, piano, and violin, and boys showed greater interest than girls in playing the drums, guitar, and trumpet, echoing a similar set of gender associations found by Abeles and Porter (1978). The children's responses to why they chose the instruments they most and lease preferred were coded by independent raters and assigned to a categories; inter-rater reliability was strong for the rating of both the first (Cohen's Kappa = .92) and last choice (Kappa = .96) instrument preference responses.

When asked about which instruments should not be played by boys, 48.6% of girls said that boys shouldn't play flute, 22.2% said piano, 13.9% said violin, and 2.8% said trumpet; conversely, when asked about which instruments should not be played by girls, 61.1% of girls said that drums should not be played by girls, 44.4% said guitar, and 12.5% said trumpet. When boys were asked which instruments should not be played by girls, 66.7% said that girls should not play drums, 44.4% said guitar, 23.5% said trumpet, 4.9% said violin, 1.2% said piano, and 1.2% said flute. When boys were asked which instruments should not be played by boys, 44.4% said flute, 25.9% said piano, 35.8% said violin, 3.7% said trumpet, and 1.2% said guitar. O'Neill and Boulton (1996) suggested that "children have pronounced ideas about which specific instruments should be avoided by members of each particular sex" (p. 177).

The participant's responses when asked for an explanation of why they felt one instrument shouldn't be played by one gender or the other were coded by independent raters; inter-rater reliability was strong (Cohen's Kappa = .94). The most common responses for why an instrument was unsuitable for one gender was that "it's an instrument for girls/boys" (O'Neill & Boulton, 1996, p. 179) for both girls' and boys'

responses. Girls were more likely than boys to report a physical reason for least preferring an instrument, while boys were more likely than girls to report difficulty as a reason for least preferring an instrument. Both girls and boys gave a reason for an instrument that was related to who they see playing the instrument (i.e. "you never see a boy play the flute"). The responses of children who were currently studying a musical instrument did not differ significantly from children who were not studying a musical instrument.

O'Neill and Boulton (1996) suggested that boys' and girls' instrument preferences remain similar to the results of Abeles and Porter (1978) and that children's gendered perception of instruments was likely influenced by their observations of adults' participation in musical activities. They also suggested that gender associations are a "critical factor" (p. 180) in children's preference for musical instruments and that gender associations inhibit students' choice of musical instruments they would be otherwise willing to play.

Tarnowski (1993) also emphasized the limiting role gender stereotyping of musical instruments has on music student's musical opportunities. Tarnowski asked three questions: "when do gender associations develop in children?", "what attitudes do preservice classroom teachers bring to their teaching?" and are those attitudes different from their students, and "what are the effects of a gender-neutral presentation on the gender-instrument associations and instrument preferences of young children?" (p. 16).

Tarnowski (1993) surveyed preservice teachers ($N = 135$) about the gender associations they have with musical instruments. Tarnowski gave each participant a survey that contained line drawings of 15 musical instruments, followed by line drawings

of a boy and a girl. First, participants indicated their own gender by circling a drawing of a boy or girl on the front cover of the form. Then, for each instrument, Tarnowski asked participants to look at the instruments on display in the classroom, listen to a recording of that instrument, and decide whether a boy or girl would most likely play that instrument. After all the instruments were seen and heard, the participants were asked to indicate which one instrument they would like most to play. They were also asked to imagine choosing an instrument for their hypothetical son and daughter and indicate which instrument they would encourage each to play.

Tarnowski (1993) also administered an instrument choice measure to children (*N = 17)* in kindergarten through second grade who were enrolled in an outreach program designed to expose children to musical instruments and facilitate hands-on encounters with musical instruments. Tarnowski administered a pretest to the children with the same format and implementation as the measure given to the preservice teachers. During each following class of the program, the children saw both a male and female model on each of the 15 instruments used in the measure. At the final class session of the program, the students were given the same pretest survey, and the music education student assistants (*N = 8*) were also asked to complete the survey.

Instruments with the strongest female associations were flute, clarinet, and oboe, while the tuba, trombone, bass drum, and string bass were viewed as most masculine. Over 50% of responses by both teachers and children showed that piano, violin, saxophone, and snare drum were considered gender-neutral (participants circled both male and female figures on the survey). However, while 53% percent of childrens' responses rated instruments as gender-neutral, only 33.3% of the preservice teachers'

responses rated instruments as gender-neutral. There was little difference between male and female preservice teachers' responses; 33.9% of female teachers gave gender-neutral ratings, while male teachers provided gender-neutral responses 33% of the time. The childrens' responses also did not vary widely by gender; 48.2% of female students and 51.5% of male students gave gender-neutral responses. However, the children's responses did vary somewhat by age; 87.9% of kindergartners, 45% of first-graders, and 39.8% of second-graders gave gender-neutral responses. When asked about instrument choice, most preservice teachers chose instruments for themselves that they had rated as gender-neutral. Of female preservice teachers, most chose instruments that they rated as gender-neutral or feminine, and female preservice teachers overall chose a wider variety of instruments than male respondents. When asked which instruments preservice teachers preferred for their hypothetical children, "the preservice teachers preferred trumpet, saxophone, snare drum, and piano for their sons and piano, flute, clarinet, and saxophone for their daughters" (p. 18).

Children's responses to the survey varied widely between pretest and posttest; while more than half of the children rated only two instruments as gender-neutral on the pretest, all 15 instruments were rated gender-neutral by over 70% of the children on the posttest. No children rated all 15 instruments as gender-neutral on the pretest, but on the posttest, 12 respondents rated all 15 instruments as gender-neutral. When asked which instruments they would most like to play themselves, 14 children chose gender-neutral instruments.

Of the responses from the music education student assistants who also completed the survey, 50.8% of total responses were gender-neutral, higher than the 33.3% of

gender-neutral responses from the preservice teachers, and lower than the 53.0% of gender-neutral responses from the children. While 35% of the gender-neutral responses came from female participants, only 15.8% of male assistant teachers gave gender-neutral responses.

The results suggest that both preservice teachers and children in kindergarten through second grade have gender associations with musical instruments, and, that those attitudes in children strengthen over time. Preservice teachers most frequently made gender-biased associations. Tarnowski (1993) also found that the manner in which instruments are presented to children affects the development of gender-biased attitudes in children, as evidenced by the increase in gender-neutral responses between pre- and posttest results.

Conway (2000) echoed the concerns presented by Abeles and Porter (1978) and Tarnowski (1993) that gender association and gender stereotyping limits student's musical opportunities. The purpose of the study was to "explore the current perceptions of high school instrumental music students regarding gender and instrument choice" (Conway, 2000, p. 2). Conway interviewed high school instrumental music students ranging from freshman to senior students ($N = 37$) about their perceptions of gender and instrument choice. Conway used qualitative analysis, repeatedly studying the transcription of each interview and identifying common themes; unmarked transcriptions were sent to two other music education researchers for data analysis triangulation.

Every participant in the study spoke about gender associations with "one instrument or the other" (Conway, 2000, p. 8). Several students suggested that gender stereotyping of instruments comes from their parents or older generations. Of the students

interviewed, all of the students who broke gender stereotypes by playing an instrument not stereotypically associated with their gender reported receiving questioning about their instrument choice. These students also reported having a general desire to be "different," parents supportive of their instrument choice, and the influence of their elementary school music teacher on their musical life. According to Conway, these students held a "whatever attitude" about the opinions of others about their instrument choice (Conway, 2000, p. 11). Parents whose children chose an instrument associated with their gender dictated instrument choices to their children. Other influences on instrument choice came from friends and physical characteristics of the instrument. While this data is not generalizable outside the participant population, Conway encouraged readers of the study to consider that the meaning constructed by the participant population may be transferable to other similar settings.

Working with a larger cultural context, Doubleday (2008) presented gendered meanings of musical instruments as a construct of the relationship between human and instrument, and she presented illustrations showing a variety of possible human-instrument relationships. She argued that "instruments exist independently of the performer as tangible objects, with identities and cultural capital of their own" (p. 4). Doubleday illustrated the basic human-instrument relationship as a double-sided arrow demonstrating a reciprocal relationship between both human and instrument. Exclusive human-instrument relationships are formed when a class of people seeks control over a particular instrument and prohibits access by those outside the class. Doubleday called these relationships "negative" when contact between human and instrument is "obstructed and forbidden;" she labeled other negative relationships as "fetishistic" when

the instrument becomes "magically charged" (p. 5). Doubleday went on to argue that many agents create gendered meaning of musical instruments besides performers, including spiritual beings that create a three-sided relationship between themselves, human, and instrument. She involved issues of dominance in the human-instrument relationship suggesting that "male musicians might incorporate culturally prevalent concepts of male dominance" by constructing a "marriage" (p. 15) relationship with their instrument.

Speaking about societal gender roles, Doubleday (2008) argued that gender associations with musical instruments are often prohibitive toward women, due to common ideas and views that women may not be strong enough to play certain instruments, or that performance of certain instruments would be "unsightly" (p. 18) for women. She mentioned Victorian British female cellists and their adoption of a "side-saddle" (p. 18) playing position to satisfy concerns of indecorous behavior, possibly to the detriment of their playing. Doubleday argued that when musicians work against the established convention of gender stereotypes, the human-instrument relationship becomes strained, not only between women and traditionally "male" instruments, but also between men and traditionally "female" instruments, at the risk of homophobic teasing.

Culture. Dawe (2003) presented cultural study as critical to the study of instrumental music, "if we are to gain a better understanding of the affecting presence of musical instruments in human music making" (p. 275). Dawe argued that musical instruments have culture-specific meaning that cannot be separated from the instrument itself. He presented the example of the Australian didjeridu, played by the Yolngu people, which has intrinsic cultural meaning in its use during activities inherently formed by

Aboriginal experience. Dawe suggested that this instrument cannot have the same cultural resonance when played by someone outside of that Aboriginal culture. Dawe also described his research of the Cretan lyra, a bowed string instrument, the playing of which is deeply embedded in the culture of contemporary Cretan society. Musical instruments cannot be considered in a cultural vacuum, but rather are imbued and saturated in societal attitudes, beliefs, and tradition.

Cope and Smith (1997) supported a contextually authentic instrumental music education that is culturally relevant to music students. They critiqued Western classical instrumental education for only serving the "gifted and talented" (Cope & Smith, 1997, p. 283) of a given population, and that the presentation of instrumental music education could be improved by contextualizing musical skills into an authentic culture. They characterized contemporary instrumental education as limiting students to a narrow field of employment and overall career goals, rather than traditional or folk approaches that aim to produce competent amateur players rather than professional concert musicians. Cope and Smith suggested that instrumental music teachers take into account the "social and cultural nature of music and its location within the community at large" (Cope & Smith, 1997, p. 288).

Abril (2009) presented a case study of one middle-school music teacher, Nancy, struggling to bring multicultural music into the curriculum. The purpose of Abril's study was to "consider how and why a music teacher becomes culturally aware and responsive in the classroom, and the challenges faced in doing so" (Abril, 2009, p. 78). A white music teacher encountered difficulties when implementing a new Mariachi ensemble into the existing music program, in which Hispanic students expressed discomfort. Abril

observed Nancy's classroom, interviewed her both in formal and informal settings, and asked her to maintain a journal of reflections about her experience in the classroom during the study. The data that Abril collected also included field notes taken during observations and interviews, lesson plans, and supplementary materials. During analysis, "data were coded for emerging themes and patterns as well as for the research questions they addressed" (Abril, 2009, p. 81).

While Nancy's teaching would primarily focus on the Western classical tradition, she realized that the students enrolled in her music classes didn't reflect the overall cultural diversity of the population of her school. She chose a Mariachi ensemble in order to attract more Hispanic students, because she hoped that Mariachi music would "help students feel that school music was relevant to their lives" (Abril, 2009, p. 82). While Nancy was concerned about the response to the implementation of Mariachi music from students, she also anticipated resistance from her principal and her music teacher colleagues in the district. However, she received mostly support and encouragement, with the exception of the initial hesitation of her principal (who later came to fully support the program) and some negative attitudes from other music teachers who feared that implementing a Mariachi ensemble would "dilute the quality" (p. 83) of the program. Nancy's Mariachi classes involved traditional rehearsal as well as listening sessions and discussions, and Abril reflects that "discussions revealed students' deep-seated knowledge of racism and stereotypes" (p. 84). These classes addressed these issues in discussion of Mariachi music, despite Nancy's discomfort in facilitating those discussions. Although Nancy was acutely aware of being a "cultural outsider" (p. 85) in these discussions, she came to realize that these open spaces for dialogue may not have

been possible in traditional rehearsals. Abril's report suggested to music educators that culture cannot be left at the door, so to speak, but is a salient and tangible influence on how students engage with music learning.

Home and Family

A student's experience outside of the classroom can have just as much influence on their educational experience as what happens in school. Two elements of students' lives away from school that effect their participation in instrumental music are their families' socioeconomic status and their home life.

Socioeconomic status. Bornstein & Bradley (2003) (as cited in Albert, 2006) defined socioeconomic status (SES) as "the relative position of individuals, families, or groups in stratified social systems where some societal values (e.g., occupational prestige, education) are not uniformly distributed" (p. 39). Albert provided a review of literature about the relationship between SES and music education and suggested that instrumental music may require a steep financial commitment for families. Financial investments like instrument rental, purchase, repairs and supplies all incur additional costs that may prevent a low-SES student from participating in instrumental music. Albert concluded that the high cost of instrumental music is a limiting factor for families with low SES who would otherwise pursue instrumental music education.

McCarthy (1980) found that SES was significantly associated with student dropout ($p < .001$) in a study of young instrumental music students. McCarthy invited music teachers ($N = 10$) to participate, who were responsible for the instrumental music program for 1,199 students in both fifth ($n = 687$) and sixth ($n = 512$) grades. Of the total students, 43% were considered low-SES. Teachers conducted both large ensemble

rehearsals and individualized instruction, in which students would practice independently as the teacher visited each student individually to provide personalized instruction. The purpose of the entire project was to gauge the efficacy of individualized instrumental music programs, and the report reflects the influence of instruction and demographic characteristics on performance on music reading measures and student dropout.

Participating teachers administered both the Music Achievement Test (MAT) and the Watkins-Farnum Performance Achievement Scale, Form A. Teachers administered the MAT as both a pre- and posttest to measure a "student's cognitive music reading ability" (McCarthy, 1980, p. 63). The Watkins-Farnum test assessed students' sight-reading ability, as the teachers did not give students an opportunity to prepare for performing the 14 unfamiliar exercises of the exam. McCarthy's (1980) research assistants administered the test to a sub-sample of students (n = 319) as a posttest. McCarthy also used school records, census data, and standardized test scores to find demographic data.

McCarthy (1980) found that of all independent variables, the standardized test scores had the strongest relationship to the Watkins-Farnum performance scores ($p <$ .001), and MAT pretest scores, standardized test scores, and SES all were significantly related to MAT posttest scores ($p <$ .001). When assessing dropout rates, McCarthy found that 23% (n = 281) of students who began the study dropped out before the study concluded. McCarthy also found that standardized test scores and SES each accounted for about 4% of dropout variance.

McCarthy (1980) concluded that (a) individualized music instruction influenced sight-reading performance as measured by the Watkins-Farnum scale, (b) both

standardized test scores and SES were significantly associated with all three dependent variables, (c) grade levels were insignificantly related to sight-reading performance as measured by the Watkins-Farnum scale and had no relation to MAT scores or dropout, (d) race did not predict MAT scores, Watkins-Farnum scores, or dropout, (e) sex did not contribute significantly to the achievement dependent variables and was only a minor factor in accouting for dropout, and finally (f) teacher differences did not influence differences in MAT or Watkins-Farnum scores or dropout. The finding most relevant to this literature review is that McCarthy demonstrated the relationship between SES and student dropout in instrumental music programs.

Klinedinst (1991) found SES to be a significant predictor ($p < .01$) of student retention in fifth-grade instrumental music classrooms. Klinedinst aimed to "examine the ability of selected factors to predict achievement and retention of beginning instrumental music students" (p. 226), specifically investigating the following factors: music aptitude, scholastic ability, math achievement, reading achievement, general music teacher rating, attitude toward music, self-concept in music, music background, motivation to achieve in music, SES, and instrument adaptation assessment.

Klinedinst (1991) studied the beginning instrumental music program for fifth-grade students ($N = 205$) using 12 instruments to assess the variables of the investigation as well as standardized testing scores. Students were assessed both at the start and conclusion of the instructional period using a performance measure evaluating performance of etudes, and their teachers provided a global rating of their achievement and progress using a researcher-created rating scale. Klinedinst used teacher records to track retention.

In order to determine whether differences existed between the seven elementary school programs used in the study, Klinedinst (1991) used ANOVA and found no differences "between schools in terms of student musical ability, scholastic ability, and academic achievement" (p. 229) or in terms of attitude towards music, self-concept in music, and home music background. However, Klinedinst did find significant differences ($p < .01$) for teacher ratings of student potential for instrumental music success, which could reflect "teacher as well as student differences" (p. 250), and family SES. SES was also "found to be weakly related to student performance achievement and retention (r = -.18 to -.26)" (p. 251). Of all variables, "reading achievement, math achievement, and scholastic ability had the strongest relationship to performance achievement (r = .36 to .42, $p < .01$)" (p. 251), while music aptitude and music teacher rating had low correlation to performance achievement (r = .20, p = .01).

After the study concluded, 24% of students (n = 50) had dropped out from the program, and Klinedinst (1991) found "a low but statistically significant relationship" (p. 233) between student achievement and reading achievement, math achievement, and SES (r = -.18 to .25, p. < .01). Additionally, SES as well as self-concept in music, reading achievement, scholastic ability, and math achievement "proved to be significant predictors of student retention (F = 6.82 to 3.17, $p < .01$)" (Klinedinst, 1991, p. 233). Additionally, Klinedinst found moderately strong interrelationships (r = .41 to .49) among attitude towards music, self-concept in music, home musical background, and motivation for achievement in music.

Overall, reading achievement, math achievement, and scholastic ability had the strongest relationship to performance achievement. SES, self-concept in music, reading

achievement, math achievement, and scholastic ability all predicted student retention; SES was also found to be the "best indicator of student retention" (Klinedinst, 1991, p. 235), although the value placed on SES may be "somewhat lessened by the between-school differences reported for socioeconomic status" (p. 235). Klinedinst also investigated students' physical characteristics as a predictor of success in instrumental music, but physicality was found to not be significantly related to success. Klinedinst concluded that (a) scholastic ability and academic achievement measures best predict performance achievement in the first year of instrumental music instruction, (b) self-concept in music and SES play a "prominent role" (Klinedinst, 1991, p. 236) in student retention, (c) physical characteristics of students cannot predict success in instrumental music, (d) student retention is more accurately predicted than dropout, and (e) "the validity of predicting performance achievement after less than one school year of instruction may be questionable" (p. 235). Klinedinst also suggested that students who come from musical homes tend to have positive attitudes toward music and good musical self-concept. SES, then, can be a valid predictor of continued enrollment in instrumental music programs.

In a study of ninth-grade band students ($N = 253$), Corenblum and Marshall (1998) found that SES predicted both parental support and musical interest outside the classroom, variables which predict student intent to enroll in band for the coming school year. Corenblum and Marshall investigated a model for predicting student intentions to re-enroll in the band program, using SES and school achievement as predictor variables. Students completed researcher-created surveys that included questions about their attitudes toward the band program, extra-curricular musical interests, and perceptions of

their parents' attitudes toward music. Other questions concerned how students attributed their own success and failure in music, overall grade average, current grades in non-music classes, and their current intentions about continuing band the next school year. Survey questions also asked students for family information to determine their SES, including factors like parental occupation and income, the number of owned or rented musical instruments, and whether the student owned their own instrument. The students' band teachers also rated student performance on a five-point scale, ranked their performances relative to others in the class, estimated students' current grades, and recorded estimated individual grades throughout the students' seventh and eighth grade years.

Corenblum and Marshall (1998) determined students' SES by asking questions about parental occupation and income; however more than 40% of students did not answer these types of questions or gave answers that could not be transformed by the researchers, so only responses about instruments and ownership were used to indirectly determine SES. SES did "predict perceived parental support (*Beta* = .79) and outside musical interests (*Beta* = 1.22) and both of these variables predicted intentions to take band next year" (Corenblum & Marshall, 1998, p. 154). SES also predicted perceived school support, which Corenblum and Marshall suggested:

> Student perceptions of the attitudes of parents and others toward the band program, as well as student intentions regarding their future in the program, reflect the norms and expectations of the social and cultural context in which these and other programs are offered. (Corenblum & Marshall, 1998, p. 154).

Band teacher evaluations of students were also shown to influence student retention and attribution. Teacher evaluations predicted intentions to re-enroll in band;

"the more positively teachers rated band students, the more likely students were to say that they would take band next year" (Corenblum & Marshall, 1998, p. 136). These evaluations also corresponded to what students attributed their success or failure. Those students who were more successful in the band program were less likely to attribute their success to "luck, circumstance, or a good rehearsal" (Corenblum & Marshall, 1998, p. 136).

Regarding SES's role as a predictor of student attitudes which predict student intentions to re-enroll, Corenblum and Marshall (1998) suggested that students who come from musical homes tend to have a positive attitude toward music and good musical self-concept. Student perceptions of their families' and teachers' attitudes connect SES and retention, Corenblum and Marshall argued, because that while these perceptions aren't easily verbalized, they do have a strong influence on students' behavior. Not only can SES predict attitudes and therefore retention, but SES has a powerful role in the formation of students' cultural beliefs about school programs.

Home life. While SES provides a quantitative and financial picture of students' homes, the atmosphere at home shapes students' experiences beyond their families' incomes and occupations. Instrumental music students are expected to do a significant amount of practicing at home, which can be difficult when family support for instrumental music is low. Home life shapes students' experience with instrumental music just as much as the classroom.

Zdzinski (1992) examined relationships among parental involvement, music aptitude, musical achievement, and performance of middle school band students (N = 113). Zdzinski used the Parental Involvement Measure (PIM) to solicit data about

students' perceptions of their parents' involvement in their study. To measure music aptitude, Zdzinski used the Music Aptitude Profile (MAP) and to measure cognitive musical achievement, he used sections of the Music Achievement Test (MAT). Performance achievement was measured by the Watkins-Farnum Performance Scale. Zdzinski, assisted by the school band teachers, administered these measures to student participants at each school.

Zdzinski (1992) found that certain PIM items were significantly related to MAT scores, including the activities "talk about music" ($p = .001$), "listen to music" ($p = .003$), and "take to concerts" ($p = .003$). MANOVA analysis showed significant two-way PIM interactions with grade and gender, as well as gender and grade. Three-way interactions of PIM by MAP and gender were also significant, as well as MAP by gender by grade. Scores on the Watkins-Farnum increased as grade level increased. Students who received low scores on the MAP on average received a lower score on the Watkins-Farnum, while students who received high MAP scores on average received a higher score on the Watkins-Farnum.

Zdzinski (1992) concluded that, overall, perceived parental involvement is not related to musical achievement, although some individual PIM items were significantly related to musical and performance achievement. This finding contradicts previous research, which Zdzinski attributes to possible differences between the definition or reporting of parental involvement, as well as differences in location of the study. The relationship found between certain PIM items and musical achievement was similar to other previous findings using participants of a similar age, but studies with younger participants did not produce a similar result. Zdzinski suggested that while factors other

than parental involvement may be stronger influences than parental involvement, "parents should be encouraged to be involved with their children at all levels" (p. 123).

McPherson and Davidson (2002) interviewed beginning instrumental music students of ages seven to nine ($N = 157$) and their mothers to examine mother-child interactions during the first year of instrumental music learning. The purpose of this study was to investigate the relationship between mother and child during the first academic year (about nine months) of woodwind or brass instrumental learning. The children were from similar socioeconomic backgrounds and received similar instruction from their primary schools in the Sydney metropolitan area. This study specifically explored the mother-child relationship, since the participating students' primary care-givers were their mothers.

This study surveyed children "in the form of interviews, musical tasks and tests undertaken with the learners, their parents, teachers, band conductors and classroom teachers" (McPherson & Davidson, 2002, p. 143). McPherson and Davidson surveyed children immediately after they started instruction and nine months after the start of instruction. Their mothers were surveyed when their children were given instruments, and then one, three, and eight-nine months after their children began instruction. The subjects' teachers were interviewed nine months after the start of instruction. Other data was collected by classroom teachers, and by analysis of students' school records.

There was a significant difference between the amount of practice time reported by students and the amount of practice time reported by their mothers. The students were unable to realistically report the amount of time they spent practicing, both because they had yet to develop a concept of time and because they included time unpacking, setting

up, and repacking their instrument when reporting practice time, rather than time actually spent playing. The researchers relied on the mothers' reports of practice time, due to the wide variability between child and mother reports. The children's practice time was spent mostly on running through pieces, rather than the assigned repetition of exercises and repertoire. The average amount of practice time was 7.33 minutes during the first nine months, but at the end of the nine months they averaged 15-20 minutes, three days per week. Many children reported experiencing practicing as a chore, and only 28% practiced on Saturdays and 24% on Sundays. Children who quit playing in the first nine months averaged only 3.49 minutes of practice a day, while children who continued instruction averaged at 8.02 minutes a day; ANOVA revealed a "significant interaction between quantity of practice done and whether the child persisted or gave up" (McPherson & Davidson, 2002, p. 145).

Children who quit also had higher and unrealistic expectations of the amount of practice they thought they would do when they started than children who persisted. All children were engaged in instrument music learning at school, the content of which was fairly consistent across schools. Of children surveyed, 80.25% required a parental reminder to practice during the first few months of instruction. After nine months of instruction, mothers needed to remind their children to practice less often, suggesting that they were responsive to their children's needs over time. Previous musical experience of the mothers surveyed played a role in their expectations for quality of practice time; mothers with no experience had less strict standards for their children's practice than mothers with previous experience. Some children quit an instrument and learned a new one, while others began instruction on a new instrument while continuing instruction on a

different one; the students who quit one instrument had significantly less total instructional time than students who didn't. Children without former instrumental music learning were no more likely to quit than students with prior experience. Children who continued instruction at the end of the nine months were consistent with amount practiced and the amount of practice they predicted before instruction started. Mothers who worried about their child's practice time had children who quit within the first nine months, suggesting that "the mothers were able to make judgments about whether or not their child would practice regularly before instruction" (McPherson & Davidson, 2002, p. 151).

This study uncovered important discrepancies between a child's conception of how much time they spent practicing and their mother's report, and that children reported practicing as a chore rather than an enjoyable recreational activity. Practice was focused on the mechanics of playing, rather than improvement on skills, and children spent practice time on non-musical activities as well as repertoire. Their mothers sometimes regarded these non-musical activities as time-wasters, while children found them legitimate practice activities. Children who quit their instruments had "unrealistically high expectations about how much practice they would undertake before commencing lessons" (McPherson & Davidson, 2002, p. 152). These children would consistently practice less than children who continued instruction. Personality and temperament may contribute to the desire of a student to persist with instrument learning. Mothers were able to assess how much support their children would need in order to succeed at the instrument. Children associated practice with homework, although most children needed reminders to practice. Many children's desire to persist waned after the first month or so

of instruction, although some mothers continued to support their children's learning despite their decline in interest, while others ceased reminding their children based on their assessment of their child's coping and interest level. The parent's willingness to support and engage with their children's instrument learning is vital to their child's ability to cope with learning an instrument.

Support at home influences a student's experience of instrumental music learning and may even influence their overall ability and success with the instrument. Researchers have used mixed methodology to explore this area, including ethnomusicological approaches.

Feintuch (1983) explored the musical life of Sammie, a fiddler and banjo player who had been performing for more than sixty years in a single-participant ethnomusicological case study. Feintuch asked two questions: why does a person begin playing music, and why might they continue? He found that Sammie grew up in a musical household, where he had "ample, almost daily, opportunity" (Feintuch, 1983, p. 212) to listen to others play music. This kind of music was also rich where Sammie lived, making both his home and local culture a plentiful source for music. The local community, in fact, provided many performance opportunities for Sammie, as well as a space for him to meet other musicians. Sammie was also rarely exposed to music outside the fiddle and banjo music of his family, and so, Feintuch argued, he took up the style of music he learned to love from childhood. Feintuch concluded by suggesting that this particular musical life was shaped by a family and community musical culture, and that since music playing was simply a routine part of life for Sammie, there seemed to be no reason to stop.

The Mind and Body

All instrumental music making involves both internal and external action, as instrumentalists translate a mental state of mind into physical manipulation of an outside object. Psychologists and medical doctors offer engaging theories about how these processes affect instrumental musicians.

Psychology. Verillon and Andreucci (2005) provided compelling insight into the relationship between humans and objects. They argued that human interaction with objects is not limited to a "didatic subject-object" (p. 410) relationship, but that objects undergo a process that transforms them into instruments, or tools, for people. Verillon and Andreucci did not discuss musical instruments specifically, but rather they framed "instruments" in a technological context. Rabardel (1995) called this transformative process instrumental genesis (*la genèse instrumentale*), which can be described as two separate stages. The first stage, in which an object must be integrated into a person's cognitive structure, is called instrumentation, and the second, in which an object is "appropriated to outside context" (Verillon & Andreucci, 2005, p. 412) and given specific qualities by its user, is called instrumentalization. The transformation and cognitive processing of an instrument and the use (playing) of that instrument may affect a person's relationship to the instrument.

Clinical psychology also offers insight into the mental aspects of music learning and performance. One extremely negative psychological influence on a person's relationship to their musical instrument is music performance anxiety (MPA). Salmon (1990) defined MPA as "the experience of persisting, distressful apprehension about and/or actual impairment of, performance skills in a public context, to a degree

unwarranted given the individual's musical aptitude, training, and level of preparation" (Salmon, 1990, p. 3). Valentine (2002) grouped the symptoms of music performance anxiety into physiological, behavioral, and mental and details the ways these symptoms can interfere with performance; "trembling limbs and slippery fingers are likely to hinder rather than help the performer" (Valentine, 2002, p. 168).

Mind-body connection is at the center of music production, and any disruption to that connection may lead to impaired performance. The psychological underpinnings that allow musicians to connect to the music they perform also allow for an embodied experience in musical performance.

Embodiment. Embodiment refers to the concept that cognition takes place not only in our brain but throughout our entire sensorimotor system. Varela, Thompson, and Rosch (1991) write that "cognition is not simply a matter of representation but depends on our embodied capacities for action" (p. 180). Embodied cognition then "depends upon the kinds of experience that come from having a body with various sensorimotor capacities" (p. 172), and "these individual sensorimotor capacities are themselves embedded in a more encompassing biological, psychological and cultural context" (p. 173). Cognition is situated within our bodies, and "knowledge is the result of an ongoing interpretation that emerges from our capacities of understanding" (Varela, Thompson, & Rosch, 1991, p. 149).

Lakoff and Johnson (1999) refer to embodied concepts as neural structures that are part of or make us of the sensorimotor system of our brains (p. 20) They do not separate our rational abilities from our sensorimotor abilities as researchers had done in the past. Lakoff and Johnson also discuss categorization, which refers to the ways we sort

information into defined groups. Categorization, they argue, is necessary for survival and is an "inescapable consequence of our biological makeup" (Lakoff and Johnson, 1999, p. 18). According to Lakoff and Johnson, our bodies themselves shape "our very possibilities for conceptualization and categorization" (p. 19) and form "rich conceptual structures for our categories" (p. 20)

In a philosophical discussion of the role of embodiment in music, Richerme (2015) argued for the inseparability of mind and body and the connectedness of a student's cognition, embodiment, emotions, and sociality during a musical experience. Rather than separating the music student into separate functions, Richerme asserted that these elements cannot be divided from one another and that the "integrated whole" (p. 83) should bear the focus of music education. This integrated whole, which Richerme insisted must be at the center of an instrumental musician's musical experience, possibly interacts with the musician-instrument relationship. Embodiment and the integrated whole of musicians allows them to connect with not only the music but also their instruments during performance.

Nijs, Lesaffre, and Leman (2009) also used broad philosophical perspectives including ecological philosophy, activity theory, and philosophy of presence to analyze the relationship between musician and instrument. They asserted that musician's experience of oneness with the instrument is a common one, and that this feeling allows the instrument to "no longer be an obstacle to an embodied interaction with the music" (Nijs, et al., 2009, p. 469). In order to perform spontaneously and naturally, integration of body and instrument must be present; the instrument must become "a natural extension of the musician" (Nijs, et al., 2009, p. 469). This integration implies that the instrument has

been incorporated into the body coordination system. If this incorporation is successful, a musician no longer focuses on the technique of music performance, but rather on the musical goals they wish to achieve through the performance.

Nijs, Lesaffre, and Leman (2009) described music performance through the framework of activity theory, in which "every human action is directed toward an object" (p. 472). They emphasized the necessity for instrument incorporation, arguing that the instrument can inhibit the mobility of the body. This incorporation, they asserted, is necessary for a flow experience (see Csikszentmihalyi, Abuhamdeh, & Nakamura, 2005): "The disappearance of the musical instrument from consciousness enables the musician to be immersed in performing the music" (Nijs, Lesaffre, & Leman, 2009, p. 477). The authors finally asserted that musical performance is only possible when the musical instrument is not obstructing the musician from flow and presence. Clarke (2012) made a related argument for ergonomics' role in musical performance, describing a pianist improvising fingerings that feel the most comfortable to their hands. Relationship to the instrument, then, must be one of comfort in order for performers to make music with more creativity and freedom.

Health. Injury may be another significant influence on the musician-instrument relationship, and research has shown that injury from instrumental music performance is common among professionals and students. In order to "provide an overview of a national survey of professional orchestra musicians" (Fishbein, et al., 1988, p. 8), Fishbein, et al. (1988) surveyed professional musicians (N = 2,212) about general physical and mental health using a researcher-created questionnaire. The first page included questions about specific musculoskeletal problems, symptoms, diagnoses, and

any medical treatment. The second page asked questions related to severity and the extent to which musicians' performance was inhibited by injury. Finally, participants answered questions about demographics, professional experience in music, and personal health habits. Participants were professional orchestral musicians and members of the International Conference of Symphony and Opera Musicians (ICSOM).

Fishbein, et al. first reported on the general health of the participants, noting that 61% regularly exercise and respondents reported concerns about cigarettes (10%), alcohol (21%), and prescription and/or nonprescription drugs (20%). The survey also asked questions about beta-blockers, a class of prescription drugs that musicians often use to combat music performance anxiety (MPA). Results should that 27% of participants used some kind of beta-blocker. A follow-up item asked about the frequency of use of these drugs, and the responses fell into three main categories: daily prescribed users (11% of respondents), occasional prescribed users (12%), and occasional non-prescribed users (72%). Reasons for beta-blocker use varied, but most participants reported using them before auditions (27%), presumably to calm nerves. Others used them before solo recitals (52%), difficult orchestra concerts (50%), and concerto performances (42%); only 4% of participants reported that they used beta blockers before every performance. Over 96% of participants also reported that beta-blockers were highly effective at reducing MPA.

The most commonly reported medical problem of ICSOM musicians was stage fright (MPA). Musicians reported trying a variety of treatments for MPA, including prescription drugs (40%), psychological counseling (25%), and aerobic exercise (17%). Reports of MPA varied slightly by age and by gender, as did the reported treatment for MPA.

Fishbein, et al. (1988) reported that overall, 82% of participants reported a medical problem of some kind, and 76% reported a problem so severe that it negatively affected their performance in some way. Of all musculoskeletal injuries reported, most occurred in the shoulder, neck, and/or back, while very few injuries occurred in the lower body. The most commonly reported non-musculoskeletal injuries were eye strain and stage fright (MPA). Participants also reported injuries specific to the left hand (14%), which again were most common in string players (12%). The most frequent symptoms for left hand injuries were pain (67%), stiffness (39%), weakness (38%), limited range of motion (27%), and decreased motor control (23%). Treatment for left hand injuries varied, but most of the treatments reported were unsuccessful.

Fishbein, et al. (1988) suggested that "music medicine is a field that deserves serious attention from health professionals" (p. 8). With a majority of participants in this study reporting medical problems so severe as to restrict performing, this physical obstacle between instrumental musicians and their instruments may strain the musician-instrument relationship.

Professional musicians are not the only instrumentalists who suffer from physical injury. Spahn, Strukely, and Lehmann (2004), explored the physiological health of university students in order to "investigate the prevalence of physical and psychological health problems and of subject-related complaints, attitudes toward the major subject, and health attitudes of music, psychology, medical, and sports students at the beginning of their university studies" (p. 26). They surveyed 655 total students majoring in music (n = 247), medicine (n = 266), psychology (n = 71), and sports (n = 71). The researchers used

a wide variety of assessment tools to collect data, including sociodemographic, physical symptom, anxiety and depression, behavior, and health locus of control measures.

The results of the survey varied by students' major field. Of music, medical, and psychology students, 8% qualified as "conspicuously depressed" (Spahn, et al., 2004, p. 28), and 33.5% of music students alone were in the borderline or elevated range of anxiety, significantly more than medical or sports students. Results also showed that music and psychology students experience "significantly more physical symptoms than medical and sports students" (p. 29). Additionally, 24.8% of music students reported playing-related health problems. Music students also "showed a significantly higher willingness to commit themselves to their major subject than the students of all the other subjects" (p. 29) and showed the most career ambition.

Spahn, et al., (2004) drew multiple conclusions. The results of their research clearly showed that stress on musicians begins in the training stage of their careers, and even in this early stage, young student musicians are experiencing debilitating injury. The researchers argued for increased attention on injury prevention in music schools from both students and teachers. Music students also seemed to take on more overall stress than other fields; however this result may be weakened due to the lack of analogous situations for medical and psychology students. Results also demonstrated a troubling tendency of music students to have more elevated anxiety ratings than students studying other fields. The researchers asserted the need for "sensitivity for the presence of psychological vulnerability among musicians at the beginning of their course of study, without leading to any stigmatization" (Spahn, et al., 2004, p. 30). Music students showed the highest professional ambition, which leads to questions about the risks of

commitment and negative health behaviors. All of these results demonstrate that music students are on average more medically impaired than other students.

Fry (1987) also examined overuse injury in music students (N = 1,249) enrolled in seven Australian music schools in order to shed light on overuse injury in university students and encourage preventative practices. Fry interviewed and examined students to collect data about injury and related medical problems. Results showed that musicians in all five instrument families were affected by overuse injury, albeit in differing levels; woodwinds reported the most injury (13%), followed by percussionists (9%), keyboardists (8%), string players (8%), and brass players. Overall, 9.3% of the total participant population showed symptoms of overuse injury. The majority of reported injuries occurred in the hand and wrist.

Each institution Fry (1987) studied reported varying percentages of injured students; schools reported anywhere from 3% to 13% of enrolled students experiencing an overuse injury. Fry reported a "virtually 100%" (p. 38) correlation between the onset of overuse injury symptoms and an increase in practice time and practice intensity. Injury often occurred before performances, competitions, or during the study of a new work. Fry also discussed student attitude toward these injuries, reporting that students feared "losing the goodwill of the teacher and the faculty" (p. 38) due to an injury and that students often worked through their injuries instead of resting to promote recovery.

All students showed signs of psychological issues, predominantly anxiety. Fry (1987) reported serious levels of stigma against mental illness, as a majority of students had been told that "there was nothing really wrong with them and that it was 'in the

mind'" (p. 38). Students reported receiving these comments by friends, teachers, and even parents.

Fry (1987) concluded by reviewing the pathology of overuse injury, mentioning the common coupling of depression with overuse injury. He also argued against blaming "bad teaching" (p. 39) or student irresponsibility for the prevalence of injury. This type of blame, he asserted, is unproductive and doesn't promote "positive or helpful action" (p. 39) that leads to solutions for overuse injury. Overall, Fry (1987) identified three major factors that lead to overuse injury: (a) genetic factors, (b) tension while playing, and (c) intensity of practice multiplied by the duration of practice. He also suggested three methods of preventative action for reducing the prevalence of overuse injury: (a) educational resources for music students and staff about the nature of overuse injury, (b) safer practice habits that alternate between work and rest, and (c) implementation of supports for heavy instruments that relieve small muscles of intense activity.

Playing-related injury has also been found in younger instrumental music students. Ranelli, Straker, and Smith (2008) surveyed students ($N = 731$) aged 7-17 enrolled in instrumental music at public schools in Australia in order to determine: (a) the prevalence of playing-related disorders and symptoms and differences between genders, (b) whether that prevalence changes with age, (c) the frequency of symptoms and differences in symptoms between genders and across ages, and (d) methods of treatment and differences between genders. The researchers focused on playing-related musculoskeletal symptoms (PRMS), simply the presence of any symptoms related to musculoskeletal problems, and playing-related musculoskeletal disorders (PRMD), in which a musician's performance was inhibited by the musculoskeletal symptoms.

Ranelli, et al., (2008) selected primary and secondary schools and administered a version of the Young Peoples Activity Questionnaire (YAQ), modified to include music-specific questions, to participants. The modified questionnaire (YAQ-m) asked questions about students' demographic information, musculoskeletal complaints, and music-specific activity. Students reported frequency of PRMS; if symptoms occurred within the previous month, students completed questions about PRMD, treatment, and location and severity of symptoms. Other questions covered musical activity, experience, practicing, and general activity questions common to other YAQ versions. Results showed that 67% of participants reported experiencing PRMS at some point, and that overall, female participants experience a higher prevalence of PRMS than male participants. Additionally 30% of participants reported experiencing PRMD; those 30% of students represented just over half of students reporting recent PRMS.

Results showed that "the prevalence of PRMS appeared to increase with age for both genders" (Ranelli, et al., p. 181); with each year, a student faced a 20% increased risk of experiencing PRMS. Additionally. 56.4 % of children surveyed reported experiencing PRMS in the previous month. While more female students reported recent PRMS than male students, frequency of symptoms did not change between genders or age groups. Treatment for PRMD differed among students, with 4.6% taking some kind of medication and 4.2% visiting a medical professional. Again, Ranelli, et al., did not find significant differences ($p = .14$; $p = .06$) between genders.

The authors concluded that children experience physical problems related to instrumental playing very early in their musical career and that for even young children, these problems "are severe enough to prevent them playing as usual" (p. 182). Overall,

they found a lifetime prevalence for PRMS in young instrumentalists to be 76% of participating students. To explain the differences found between the genders, Ranelli, et al., suggested that differences in age, maturity, body composition, psychosocial characteristics, and instrument type or usage may account for the disparity of reported PRMS between female and male participants. They also suggested older students experience higher levels of PRMS and PRMD simply because they have accumulated more time playing an instrument than younger students. The relatively low prevalence of PRMS in younger students remained troubling; the researchers suggested that incorrect instrument size may play a role in the development of PRMS in young instrumentalists. Ranelli, et al., also suggested that earlier intervention of even mild symptoms may be necessary to prevent playing-related problems.

Elaborating on the concerns raised by Ranelli, et al., (2008) about young instrumentalists, Fry (1986) discussed the problems inherent in teaching a young child to play an instrument originally crafted for adult bodies. He argued that building technique quickly "imposes considerable physical demands" (Fry, 1986, p. 25), and that pressure on students with high musical ability may occlude signs of physical distress. Fry suggested that children learning an instrument use short and intense practice sessions and that parents of these children encourage them to communicate any physical symptoms of injury; children must also be taught to stop practicing if they experience any pain while playing.

Professional Well-being

Little research has been directly focused on the musician-instrument relationship. Simoens and Tervaniemi (2012) surveyed music students and professional musicians

(N = 320) to determine if a relationship existed between the musician-instrument relationship and professional well-being, as well as to determine whether or not the "feeling of unification" (p. 172) with one's instrument is truly advantageous to the musician.

Simoens and Tervaniemi (2012) distributed a lengthy survey among multiple music schools, professional ensembles, a record company, restaurants, and operas. The researcher-created questionnaire items covered personal and lifestyle information, sleep habits, substantial life events, musical background, confidence in performance, performance variables, perceived pressure and support from colleagues, superiors, and family, coping strategies for performance and their effectiveness, history with MPA, factors related to MPA, and retrospective evaluation of performances. The measure also required participants to complete pre-existing questionnaires and surveys, including the General Health Questionnaire (GHQ), the Social Phobia Inventory (SPIN), and the Performance Anxiety Questionnaire (PAQ).

The survey presented four possible categories for the musician-instrument relationship as follows: "so united with my instrument/voice that there is no difference between us" (the "united" group), "it's really me as a person in front of the audience rather than my instrument/voice" (the "person" group), "protected/hiding behind my instrument" (the "hiding" group), and "my instrument is an obstacle to overcome between me and the audience" (the "obstacle" group) (Simeons & Tervaniemi, 2012, p. 174). Of musicians surveyed, 51.3% fell into the "united" group, 27.8% into the "person" group, 10.9% into the "hiding" group, and 2.2% into the "obstacle" group; 7.8% of respondents did not respond or had more than one answer.

Both genders were equally distributed among groups, but more professionals than students were in the "united" group and members in the "united" group tended to be older than those in other groups. The "obstacle" group reported worse mental health than all other groups, but there were no differences in alcohol use or physical exercise between groups. The "united" group had lower social phobia scores than other groups, while the "obstacle" group reported the highest scores on avoidance than any other group. The "united" group also had collectively the most experience in music. The "obstacle" group showed less confidence in their performance than other groups, while the "united" group showed more confidence in their performance and reported less perceived pressure than the "person" group. The "united" group also reported feeling more connected with the audience than other groups (Simoens & Tervaniemi, 2012).

When reporting anxiety-related variables, the "united" group scored lower on general and debilitating MPA measures and reported higher scores of "positive" music performance anxiety, or "boost." Most members of the "united" group also reported some recovery from MPA, while in the "obstacle" group, most members reported worsening MPA. However, the "united" group members reported feeling more nervous than any other group during a concert (Simoens & Tervaniemi, 2012).

When asked about coping strategies for performance, all groups reported using positive thinking and practicing higher than any other strategy. The "united" group reported positive thinking as the most effective coping strategy; other strategies included drugs, smoking, superstition, relaxation, and medication. All groups included members who used beta-blockers, and 21.6% of all surveyed musicians were reported users. The "obstacle" group was the only group whose majority of members sought out professional

help for their MPA, but 85.6% of surveyed musicians reported needing more intervention against MPA. When evaluating statements about performance and MPA, the "obstacle" group agreed more with the statement that "stage fright has had a negative effect on my musical career/study" and agreed the least with the statement that "playing music is still as fun as it used to be" (p. 177).

Simoens and Tervaniemi (2012) concluded that musicians with different types of musician-instrument relationships do show differences in professional well-being, and that overall, the "united" musician-instrument relationship seems to be the most advantageous relationship. They also suggested that "this musician-instrument relationship should not be ignored in music education" (Simoens & Tervaniemi, 2012, p. 179).

Summary

Research has established that extra-musical factors including gender (Abeles, 2009; Abeles & Porter, 1978; Conway, 2000; Doubleday, 2008; O'Neill & Boulton, 1996; Tarnowski, 1993), culture (Abril, 2009; Cope & Smith, 1997; Dawe, 2003), socioeconomic status (Albert, 2006; Corenblum & Marshall, 1998; Klinedinst, 1991; McCarthy, 1980; Neirman & Veak, 1997), home life (Feintuch, 1983; McPherson & Davidson, 2002; Zdzinski, 2006), psychology (Salmon, 1990; Valentine, 2008; Verillon & Andreucci, 2005), embodiment (Clarke, 2012; Nijs, Lesaffre, & Leman, 2009; Richerme, 2015), physical wellbeing (Fishbein & Middlestadt, 1987; Fry, 1986, 1987; Ranelli, Straker, & Smith, 2008; Spahn, Strukely, & Lehmann, 2004), and professional wellbeing (Simoens & Tervaniemi, 2012) influence instrumental music student's instrumental music learning. Each of these factors contributes individually to a

musician's narrative, but little to nothing is known about the intimate and personal connection a musician has to their instrument. There is little to no qualitative work on the experience of the instrumental musician and the role of their relationship to his or her instrument. Music educators should be aware of this relationship's influence on instrumental music learning (Simoens & Tervaniemi, 2012) and adjust instrumental music pedagogy likewise.

Chapter Three: Methodology

This chapter first discusses qualitative research methods and narrative inquiry and, second, outlines the procedure to be conducted for this study. In keeping with qualitative research methodology as discussed by Bresler (1997), the design of this study may change and develop in response to the participants' engagement through interviews and online portfolio content posted by participants.

Qualitative Research Methods

Qualitative research is the study of "things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them" (Denzin & Lincoln, 1998, p. 4). Qualitative methods allow us to understand the world around us and consider our influence on the lives of those around us (Roulston, 2006).

McCarthy (2007) discusses qualitative methods in the context of music education research. Speaking of musical experiences including singing, composing, and performing, McCarthy says, "the meanings inherent in such experiences are entangled not only with the music making itself but also with the human relationships invested in the activity and the dialectic that sustains them" (p. 5). She asserts that music students' identities develop as they undergo schooling and that their musical identity is an "integral part" (p. 5) of the variety of identities related to extramusical groups, like gender or cultural groups. McCarthy argues that "the very act of recalling music and its meanings is an act of self making and self knowledge" (p. 6). Exploring musical lives through interviews and story-telling makes the researcher an active participant in that "act of self making" as they engage with students' telling of life stories.

As the qualitative researcher is an active participant and observer over the course of the study, qualitative research embraces the relationship between researcher and participant, recognizing the mutual shaping (Bresler, 2006) that occurs during fieldwork and data collection. Bresler describes the dynamic and changing quality of reflexive methodology as improvisatory in nature, as the researcher responds to the participants and develops concepts as they arise over the course of fieldwork. Rather than being disrupted or even derailed by unexpected data, the researcher can seize the opportunity to explore a new area that he or she originally did not anticipate.

As qualitative research involves study in the field and seeks to provide a holistic picture of an individual's life, researchers must make ethical decisions to include and exclude data from final reports. The emotional and controversial "dirt" in sociological research in general is often excluded in favor of the sanitized version of events, at the cost of possible misrepresentation. Blackman (2007) acknowledges this issue: "reflexive sociology raises moral issues" (p. 706). Realistic accounts of fieldwork include the emotional states of both participants and researcher. While sociologists are discouraged by academia from including emotion of both themselves and their participants, a participant in Blackman's 1998 ethnographic study on homeless young families described her history of domestic violence: "I don't like to talk about it, but I have to. It must come out" (p. 704).

Blackman (2007) acknowledges that fieldwork can present a threat to participants, especially when the research being conducted delves into the personal life of participants. He suggests that while participants in qualitative research can suffer pain as a result of their participation in the study, "this experience is not necessarily damaging and can have

a therapeutic effect whereby participants feel empowered" (p. 704). I assert that while participation in qualitative studies can raise difficult and sometimes uncomfortable stories, a researcher who has been allowed access to those stories has the power to bring them to light and encourage future researchers and educators to take them into account when researching and teaching.

Narrative and Narrative Research

People lead storied lives, and, according to Bruner (2004), humans rely exclusively on narrative to describe their own lived experiences over time. In fact, a person's inability to construct a coherent life story has been connected to mental illness, and the reconstruction of a personal narrative may aid recovery (Lysaker, Lysaker & Lysaker, 2001). The act of telling one's life story is not simply an expository act; it is also an interpretive act (Bruner, 2004).

Psychologist Jerome Bruner is widely recognized for developing the concept of the narrative construction of reality. Bruner (1991b) explained, "we organize our experience and our memory of happenings mainly in the form of narrative" (p. 4), which he defines as "an account of events occurring over time" (p. 6) in which time is constructed by the meaning of the events that it measures. When we describe accounts of events in our lives, these tellings coalesce into a "more or less coherent autobiography" (Bruner, 1991b, p. 18) that revolve around ourselves and our purposeful actions within our social world.

Variations in narrative structure originate in the cultural and linguistic contexts in which a story is told. However, Bruner (1991a) argued that in order to be considered

narratives, stories must focus on two elements: people and their intentional states, and how these states resulted in actions and behaviors.

Not all events or activities are important enough to include in the telling of a story. Bruner (1991a) provided the example of an uninteresting story of a person waking up, dressing, eating breakfast, and going to work. Narrative is significant because of its exceptionality—an outstanding quality of the story itself that merits its telling. When individuals tell their life stories, they choose which elements to include and exclude, which people and experiences merit involvement in the story, and how to arrange and organize the various elements in the story.

Life stories and autobiographies are unique in that the both the protagonist and narrator are the same person. Bruner (1991a) defined an autobiography as the setting forth of a "view of what we call our Self and its doings, reflections, thoughts, and place in the world" (p. 67). He described the act of telling a life story as the narrator in the present recounting the events and progress of the protagonist in the past. This reflexive nature of telling life stories means that while many events in the story will be in the past, the narrator must involve the present in order to present the entire story of the protagonist, which runs up to and includes the storytelling act.

As Bruner (1991a) admitted, narrative itself "solves no problems" and "simply locates them in such a way as to make them comprehensible" (p. 72). However, qualitative researchers can use narratives as data for the study of others' lives. Narrative inquiry, as defined by Roulston (2007), involves researchers analyzing data as literature. Another approach used in narrative research is for the researcher to attempt to "construct narratives that represent the experiences and perspectives of their participants" (p. 159).

Narrative research provides a holistic representation of a person's life story, including a wide variety of issues that influence a person's individual narrative. This holistic representation comes from "knowing based on what others share and reveal" (Brand, 2006, p. 168) and presents that knowledge as a product of the understanding shared between researcher and participant.

Undertaking narrative inquiry in music education research can benefit teacher, student, and teacher-researcher, as "narrative inquiry can help access the impact of music teachers and students on each other's life stories" (McCarthy, 2007, p. 7). Music teachers stand to benefit from gaining respectful access to the lively array of students' experiences because the understanding of students' narratives allows teachers to locate their place and their influence on that student's life story. Music students also stand to benefit from the exchange of story between themselves and their teachers, as the music student's education can be better integrated into their own story.

McCarthy (2007) suggested that narrative inquiry "will likely increase knowledge about how relationships and identities are formed in and through musicking" (p. 10) and that "narrative can play a role in the evolution of the artist-teacher" (p. 8). Narrative inquiry, then, is an excellent tool for exploring the musician-instrument relationship.

Design

Participants. Participants in this study were music students who were enrolled in the Bachelor of Music (B.M.) program in instrumental performance studies at the music school of a large Midwestern university at the time of data collection who studied the following instruments: violin, viola, cello, and trombone. Students who majored in the following instruments at the time of data collection were invited to participate: violin,

viola, cello, double bass, oboe, clarinet, bassoon, flute, French horn, trumpet, tuba, trombone, harp, saxophone, and guitar.

Exclusion of certain instruments also organizes potential participants into a group of students who are likely to (1) perform exclusively on one physical instrument and (2) are more likely to own their own instruments. First- and second-year university students studying piano and percussion often don't own their own instruments (except mallets in the case of percussionists) and frequently perform on unfamiliar instruments, while string, wind, and brass instrumentalists usually play one specific instrument throughout their study. Certain instrumentalists are trained to perform on two like instruments but they often prioritize and own one instrument; for example, French horn performance majors may play both the modern French horn and Wagner tuba in orchestral settings, but they rarely personally own a Wagner tuba and they only practice Wagner tuba if required by the performance context (E.C. Edwards, personal communication, May 26, 2016).

Vocalists were also excluded from participation. While vocalists and instrumentalists both require specialized control over body movements and highly intricate manipulation of an object that produces music, vocalists cannot simply walk away from their instrument (Roberts, 1991). The voice is an internal instrument that cannot be separated from the vocalist, and if the voice is injured or damaged, the vocalist cannot replace their voice with another (Timmermans, Vanderwegen, & De Bodt, 2005).

Students in composition, music education, and early music were excluded from participation as well. As described by program guidelines, the B.M. program in performance studies at this large Midwestern university requires undergraduates to enroll in fewer academic classes and more credits of applied study than non-performance

programs. With fewer academic classes, performance majors have more free time during the school day, and the increased weight on lessons with artist faculty may provide motivation to spend those free hours practicing. Increased practice time means that, of the undergraduate music major population, these students will likely have spent the most time with their instruments.

I also excluded students who had already completed an upper divisional exam as described by the school of music's annual bulletin at the time of data collection. This decision had two purposes: limiting the pool of potential participants and understanding the perspectives of young musicians who have so far been relatively untested in their university study. At the conclusion of the second year of study, students at this Midwestern university are required to play an upper divisional exam. As described in the bulletin distributed to undergraduate students enrolled in the music school, this exam requires students majoring in performance studies to perform works from the solo repertoire in front of faculty from their department. This performance results in a grade on their official transcript and, if performed below the standard set by faculty in each department, can result in suspension and eventual removal from the music school. Excluding students who have already taken their upper divisional exam organized potential participants into a homogeneous group of students who have not yet been required to perform with their instruments with such high stakes of failure.

I used purposeful sampling by selecting student names whose major instrument was printed on university orchestra, wind ensembles, jazz band, and guitar ensemble rosters and contacting students via email. Any respondents who confirmed that they met the above criteria were invited to participate in the study. I hoped to find six students in

order for data collection and analysis to be comprehensive and for me to give each participant the time and attention required to produce a rich and detailed final report; recruitment efforts yielded five participants.

The selected participant group was homogeneous within the criteria discussed above and heterogeneous as to the instrument they studied at university. Participation by students who study different instruments provided narratives reflecting a variety of experiences.

Data collection tools. I used two forms of data collection: semi-structured interviews as discussed by Merriam (1998) and online portfolios.

The musician-instrument relationship is not directly observable, and, as the purpose of the study was to explore this relationship and its role in the lives of instrumental music student, the interview was an appropriate data collection tool. Semi-structured interviews, as described by Merriam (1998), allow the researcher to "respond to the situation at hand, to the emerging worldview of the respondent, and to new ideas on the topic" (p. 74). A list of general interview questions guided the semi-structured interviews, while questions that were often improvised by the researcher during the interview served to probe topics raised by the participant (Merriam, 1998).

I interviewed each participant three times over the course of data collection in order to allow both me and the participants to clarify and expand on ideas uncovered over the course of data collection. These interviews lasted between 25 and 50 minutes, depending on the depth of discussion, and covered a set of interview questions that are detailed in the next section.

I conducted interviews on the music school campus in order to provide a comfortable and familiar setting for the participants. The interviews were digitally recorded and transcribed post hoc, allowing me to talk fluidly with the participant and to prevent distraction by note-taking. I took field notes at the conclusion of interviews in order to record overall impressions of the interview not captured by audio recording.

Over the course of data collection, I also invited participants to contribute to a multimedia portfolio, maintained online at a private individual website hosted by IU Box. Participants had "editor" status, meaning that they could upload photos, videos, audio recordings, prose, art, or hyperlinks that lead to content they find meaningful to their relationship with their instrument along with text explaining their choices; participants may also choose not to upload content. They could also add a written comment to each post and add a tag to each post to sort and categorize their uploads. Participants were not be able to view one another's portfolios, and only the participant was be able to update and/or edit the content posted to his or her individual portfolio. I had viewing but not editing access to participants' portfolios. Over the course of data collection, I viewed updates to all participant portfolios and invited them to comment and expand on their posts during interview sessions. Participants could elect to allow their journal items to be used in the transmission of findings but excluded from the final research report, and to maintain privacy, each participant's website was password-protected and destroyed at the conclusion of the study. No participant elected to upload content to their online portfolio.

While these personal documents would be subjective and not guaranteed to be accurate accounts or depictions of events, these personal items would "reflect the

participant's perspective" (Merriam, 1998, p. 116) using a wide variety of media outside the interview format.

Procedure. If students met the criteria for participation as described in the recruitment email, they could choose to respond and indicate their interest in the study. Qualified students who responded to the recruitment email were invited to participate in the study.

Prior to the first interview meeting, each participant was asked to complete and return a brief questionnaire with a few items of demographic information (see Appendix B) to provide a starting point for conversation. Before the first interview began, participants were given information about their portfolio that includes directions and limitations regarding content uploads (see Appendix C) in person. The interviews were scheduled individually based on each participant's availability.

During the first interview, the following topics were explored:

- Personal musical history, previous years of study, and cumulative music education
- Important people in the course of the participant's music education
- The process of choosing the instrument type the participant plays at the time of data collection (e.g., violin in general, not the specific violin the participant plays now)
- The process of choosing the specific instrument the participant plays at the time of data collection

I chose these initial interview questions in order to address elements of the research questions, "how do these music students' relationships with their instruments develop?"

and "what role do these relationships play in these music students' life stories?" A student's personal musical history provides information about each participant's life story and gives the researcher a sense of where participants came from before attending music school. Understanding important people in the course of the participant's music education contextualizes the musician-instrument relationships among other important relationships in the participant's life. The entire process of instrument choice may include several important moments that mark the beginning of the musician-instrument relationship's development, as the process of instrument choice involves the musician first "meeting" the instrument. The subsequent interviews were structured by the responses to the first set of interview topics. During all conversations following the initial meeting, other topics may have included:

- Mechanics of the instrument
- Routine care and maintenance of the instrument
- Physical requirements of performance
- Instrument-specific technique
- Relationship between instrument and identity (e.g., being a violin-player or being a violinist)
- History of performance- or practice-related mental problems (e.g., music performance anxiety)
- Financial commitment of instrument rental, purchase, and/or maintenance
- Influential performance experiences
- Musical expression as related to the instrument

Due to the changing nature of qualitative research, topics discussed in interviews changed and evolved based on the direction of conversation. Throughout the interview process, I asked the participants to review and clarify points made in previous conversations.

As I transcribed the data, I sorted it by assigning each participant a name to serve as a false identity. Participants' names were never added to print. All other text data were coded by the type of data (e.g., interview transcription, photo upload, journal entry). I collected and labeled data in a file with each participant's false identity. Participants' interviews took place roughly every other week over the course of six weeks; one participant's final interview occurred more than two months after the initial interview.

Analysis. While interviews were conducted as discussed by Merriam (1998), data were analyzed using holistic content analysis (Lieblich, Tuval-Mashiach, & Zilber, 1998) as described by Wells (2011). This approach begins with the researcher reading and viewing data multiple times to find emergent patterns, then writing down any first impressions of the entire data set into a researcher's journal. The researcher uses patterns to identify themes in the data and then track those themes throughout the entire collection of data belonging to any one participant. As themes are developed, the researcher draws conclusions from the data using the lens of his or her own theoretical framework (Lieblich, et al., 1998). Then, I used axial coding (Saldaña, 2016) to understand how these emergent categories functioned across participants.

As data were collected, I repeatedly read and viewed data as a collection belonging to each participant, maintaining a researcher journal that tracked patterns I saw, themes that emerged, and further questions to address during future conversations. Next, I used negative case analysis and examined data to check for items that were

incongruent with possibly emergent themes, to ensure that the themes were results and not researcher bias. The findings uncovered by this analysis often send the researcher back to discover new literature not previously predicted by the researcher before the study began (Merriam, 1998).

Throughout data collection, participants reviewed and discussed the themes present in their data, and together we crafted personal histories using dialogic mind theory and relational capacities as a theoretical framework. These personal histories are interpretations of raw data, constructed using emergent categories. In emergent category coding, I used the theoretical frameworks as ways to shape the data. These frameworks intersect one another in how they address a person's being in the world and the way they grow as a result of their interaction with that world. These frameworks shaped the data in a different way than other frameworks may have. Finally, I presented the narrative of each participant and compared themes across participant narratives.

Researcher bias. I completed my undergraduate degree in music performance at this university, so I am very familiar with facilities, departments, and particularly faculty. I have pre-formed impressions of many faculty members that will influence how I will interact with students of theirs who may participate in this study. I may be blinded to issues raised by participants due to the beliefs and attitudes I formed during my own undergraduate study. However, my insider status and emic perspective allowed me to interview fluidly, without stopping for explanations of buildings, programs, or other details.

Over the course of my own music education, I have formally studied violin, cello, and piano, and I have exclusively performed as a cellist in my adult life. I did not

intimately understand details of wind or brass instruments' mechanics, maintenance, or monetary cost of an instrument purchase. For example, while string instruments are sized and the transition to a new size can be very exciting for the young student, I could not imagine an analogous event for young wind or brass players. I was also unaware of how the concepts reviewed in Chapter 2 (gender, culture, socioeconomic status, home life, psychology, embodiment, physical well-being, and professional wellbeing) influence music learning experiences other than my own.

Chapter Four: Results

In this chapter, I first present the five narratives, each dually constructed by me and the participant. The headings act as framing devices, indicating one of the primary themes of each participant's story. After each narrative, I present the result of the data analysis by describing the relationship that each participant has had over time with their instrument. Next, I return to the theoretical framework presented in Chapter One to review the findings. Finally, I present the cross-participant analysis to compare the relationships that participants have had with their instruments. These findings across participants include new literature not previously addressed in Chapter Two.

Rey

Rey is 20 years old and a freshman viola performance major. She began instrumental music study on piano and then violin, and she has been playing the violin and viola for 13 years.

Loving the inner voices. Rey started in string instrumental music by playing the violin when she was seven years old. After playing the piano for a year, her mother asked if she wanted to play another instrument. Her mother was not familiar with the viola and other less common orchestral instruments, and she chose the violin for her because she considered the violin to be a feminine instrument. Rey's sister played the flute because her mother also considered the flute to be a feminine instrument. Rey herself doesn't agree that instruments inherently have gender associations, but her mother's reasoning did not bother her at the time. Even though violin was not her first choice, she enjoyed it enough to continue it through fourth grade, when she joined a youth orchestra. "That is when I grew a deeper love for my instrument," she said. Rey was ten years old when, in

an elementary strings program, she first played the viola. She recalled wanting to learn something besides violin, since she already knew how to play violin but did not start private viola lessons until the tenth grade. One year later, she completely switched over to viola.

Rey has been told that she has "more of the personality of a violist than a violinist," but she was not exactly sure what that meant. She sees other violists as friendlier than other instrumentalists, particularly violinists. "A lot of violists are very supportive of one another," she said, "I think they are less competitive." She also mentioned a friend of hers who switched from violin to viola as an adult, and she noticed a change in personality. "He kind of became more of, one of those people that were more supporting of one another," she said, but she was not sure whether it was just because of the instrument change or because her friend joined a more supportive studio. In general, she described herself as an introvert, not very social, and a perfectionist, saying she enjoyed spending "a lot of time in solitude." She related that to the viola, saying, "the viola cannot project like other instruments because of its acoustics and so I think maybe that kind of relates more to the introversion and that is why we are really good at playing the supporting characters." Just like the viola "cannot really take a center stage because it cannot really project as much," Rey is "not someone who would want to get up in front of everyone." For Rey, her personality matches the personality she attributes to her instrument.

When we talked about that switch from violin to viola, Rey mentioned not enjoying playing violin in orchestra. "I hated playing the melody all the time," she said. She "was always happier playing second violin than first violin," saying that she had

found a deeper love for the inner voices. Viola repertoire also appealed to Rey, since it is more "focused on making a beautiful sound" than violin repertoire. She laughed as she described violin repertoire as being focused on "look how many fast notes I can play!" She values viola repertoire because "the viola has such a rich sound" and the repertoire allows her to feel like she is "being immersed in a rich sound." The most appealing part of viola playing for Rey is chamber music, because she enjoys "switching between the inner and outer voices." What she enjoys most about playing, however, is "being a part of something greater." Rey considers her place in music to be an opportunity to "give people peace through music or joy through music, and to teach people about giving."

Becoming a musician. It took Rey a few years to consider music a serious part of her life rather than just a hobby. When Rey was in ninth grade, she started taking lessons from a new violin teacher. It was during this time, she said, that she was introduced to "real repertoire" instead of just method book material. She became more involved in auditioning for regional performance opportunities, and she was invited to participate in her state's All-State orchestra the first year she auditioned. This was the first time she realized, "Wow, I can actually do this, I can actually be a successful musician." She was also admitted to a summer program in her home state, which only accepted 20 or so musicians. This was the first summer program she had attended, but she recalled thinking that she would want to continue with music in college, since she liked the feeling of being around music for most of her day.

Rey's new teacher was another influence on the development of her musicianship. Her teacher encouraged her to practice more, and she credited that teacher for her

increased motivation and improvement. She had "never had a teacher who just loved violin as much as he did" and she felt a desire to live up to his expectations.

Mastering the viola. Rey's relationship with the viola has changed over time. I briefly described the four types of relationships from Simoens and Tervaniemi's (2012) study and asked how she might describe her own relationship. Rey used to think of her instrument as an obstacle due to the level of technical mastery necessary to perform successfully. Mastery of the viola frustrated her at some points, because she couldn't quite figure out how to solve certain technical problems and difficulties. After studying the viola for some time, however, she now feels more comfortable performing in front of others. She does not see much of a difference between herself and her instrument, since the viola is "one way to express my music" and represents a means of communication. Rey does not see the viola as entirely united with herself, but rather she thinks that she and the viola work together when they go on stage together.

Rey described the viola's design as acoustically difficult, laughing as she told me that to have "a true alto sound," the instrument would need to be 20 inches long. This imperfect design means that she has to work harder to project sound than a violinist. The viola's size also means that "it is a little more awkward to facilitate around the fingerboard especially in the higher positions." Some violas even have cut-outs on the upper bouts specifically to make playing in higher positions easier.

Luke

Luke is a 19-year-old sophomore studying both trombone performance and music education. He started trombone in band class in sixth grade after seeing his older brother

enjoy the band program in middle and high school, and he also plays a variety of other instruments.

Influence of family and friends. We were just seconds into our first interview when Luke brought up the influence of his family on his musical life. Luke spoke openly about the importance of his older brother in his choice to pursue music. His older brother, a French horn player, led the way to music study by being active in the middle and high school band programs. Luke spoke warmly about his older brother and the importance of seeing him perform in band concerts and the relationships he saw his brother form over the course of middle and high school. His older brother even taught him to buzz on the French horn mouthpiece to help him prepare for choosing a band instrument. Luke had played viola in an elementary strings program, but rather than continue to pursue a string instrument, he wanted to follow in his brother's footsteps. All of Luke's siblings also play brass instruments in band.

Luke's relationship with the trombone began during a middle school band night during which graduating fifth graders were invited to try a variety of instruments and decide to participate in band for the next year. He laughed as he recalled his failed attempts at both woodwind and percussion instruments. The middle school band director already knew Luke's older brother and was familiar with his family and he noticed Luke's dismay after his failure in the reed and percussion rooms. He encouraged him to pursue brass instruments after hearing him buzz on the trombone mouthpiece. Luke recalls this interaction fondly, remembering those words of encouragement: "You already have the tendency to be a brass player," and "if you work, I'll work with you and we can develop you into a really good player." This particular teacher was an extremely

influential person in Luke's development as a trombonist, even from their very first interaction in an educational setting.

Luke's home life, despite not being intensely musical, had a profound impact on his musical activities. His interest in band mostly came from his older brother, who had "a really good crowd of friends" that made band seem inviting to Luke. Attending band concerts and listening to band music also gave him the desire to participate in band. Rather than a strict directive from a parent to play an instrument, growing up with a musical family life significantly influenced Luke to pursue music. Luke was also the only participant to mention family finances in interviews. He briefly mentioned passing on buying a new instrument during his sophomore year partially because of its financial cost, but the following year he did return to purchase the instrument because he could not pass up the instrument again.

Social networks also played a significant role in Luke's decision to pursue a band instrument over the viola. He described significant differences between the orchestra students, who were not really "a tight group," and band students who, through his older brother, presented a warmer and more inviting atmosphere. His older brother experienced band as a "larger band community" in which students playing all instruments became close friends. As Luke became more and more involved in band he felt welcomed into the community and social circles of band students. As he progressed through high school leaving band was not even a question for him, especially after seeing how much his older brother enjoyed marching band and the Bands of America competition. Luke was involved in other school activities but there was something missing from advanced classes and sports activities that he found in band classes. The social element of band, he

noted, was different from academics or sports; in wrestling, for example, he remarked, "you are with a bunch of jocks." He recalled walking through the halls of his high school and having difficulty *not* seeing and greeting his friends from band. Later, he mentioned that he is still in touch with high school band friends to this day.

The importance of teaching. Luke is pursuing a double major in trombone performance and music education, which both recall his experiences in middle and high school band. Leadership opportunities in band introduced him to working with students. As a junior and senior in high school he was a drum major in his high school band, which inspired a passion for "working with and for people" in the music setting. As Luke became more involved in teaching, he began attending conventions and seminars in his home state. He recalls a "constant stream of reinforcement from teachers" that really solidified his passion for ensemble teaching and music.

When he spoke about teaching, Luke absolutely radiated positivity and enthusiasm for what he does. He considers himself "grossly lucky" to have the breadth of positive experiences and opportunities in music. He "would love to have the opportunity to give my kids the same experience and try to share this love for music." His teaching goals are not to produce professional musicians and not to force students into auditions for music programs, but rather to develop "a love and a memory and a community" for his students. He elaborated on the variety of skills he learned as a music student, including "developing daily routines, developing listening schedules," and accepting responsibility. He rather poignantly remarked, "I found myself learning more about myself and life and about music through this one instrument than like any other thing."

Everything Luke hopes for in his own teaching appears to stem from his own positive experiences as a music student.

Loving the sound. When I asked Luke about the first time he got a trombone for himself, it was almost as if he was instantly that fifth-grade boy who could nott contain his excitement. "Oh my gosh, it was incredible! No trombone has shined that much when I opened it. It was like everything I could have wished for and more." Making the first "whaaa" sound on the trombone was even more exciting, and Luke remembers being so enamored by the sound he could make that "it was difficult for me not to have that thing on my face." Despite not being in school or having any formal instruction, he avidly read all the required band books over the summer and thanks to many band concerts, he already "had this idea of what a brass instrument should sound like" and wanted desperately to make that sound, which he called "the giant golden roar." He remembers being immensely eager during his first band classes, in which he was a member of a four-person trombone section. His band director was able to give him individual instruction, which not only strengthened his relationship with Luke, but also Luke's relationship with the trombone. "There was a lot of solo playing, there was a lot of playing for your peers, and … you having to provide feedback for your peers" in this environment and "sixth grade just flew by." Luke was particularly motivated to practice during this period because of upcoming auditions for the two seventh and eighth grade bands and his practicing paid off when he was placed first chair in the honors band. His place in the top of the section throughout middle school continued to strengthen his connection to the trombone and his motivation to keep pursuing excellence on the instrument.

Throughout our interviews, Luke continued to return to the sound of the trombone. He recalled coming across his current instrument, a Conn horn in rose brass, at a Texas Bandmasters Association convention before his junior year in high school. "Like all instruments at conventions, it is buffed up, it is gussied up, it is looking pretty" he remembered and, while he had come across this instrument the previous year and passed it up due to financial reasons, this time he "played it, picked it up, loved it, and went away with it." When I asked what was special to him about this instrument when he first played it, he said "it was one of the few instruments that I picked up that just immediately resonated." He said he "had a sound in mind" and when he picked up an instrument, he "tried to make the best sound I had without having to fight" to produce that sound.

I was intrigued by what it might mean to "fight" an instrument and Luke described the feeling of picking up an instrument and just being able to get the sound like "bam, you get it, without having to adjust, without having to fight, [and] without having to push more, without having to push less." He believed that some instruments, then, just fit better for certain instrumentalists than others and contribute to a better sound with less effort. In fact, Luke described at length a process that one particular trombone maker, Edwards, offers for instrumentalists. Musicians spend a day at the factory playing a variety of instruments and the makers can help them adjust and fine-tune every element of the instruments to give them the sound they are looking for. This attitude is common in Luke's experience on the trombone, in which players are constantly "nit-picking and adjusting" and "push[ing] the limits of your ability." Part of playing the trombone for Luke, then, is about continuing to progress and move forward in music-making throughout his entire life.

Luke sees his trombone as a means of expression. "The trombone is kind of my voice at this point" he told me during our first interview. For him, the trombone has promoted self-expression, self-understanding, and growth:

> It was a way for me to express emotion, it was a way for me to tell a story, I learned so much about music using trombone as a vehicle, and I also found out a lot about myself using trombone as kind of a way to have these experiences to let me grow.

Luke expressed intense connection to his instrument. During our conversation, he told me that every brass player remembers the first dent they made in their instrument. When I asked him about damage to his instrument, he recalled seeing his trombone fall off a trombone stand. He told this story with obvious distress and shuddered at the thought of future damage to his instrument.

Being a trombone player also means being part of a specific culture for Luke, which he experienced both in grade school band and in his trombone studio in conservatory. He spoke warmly of his studio-mates and what he called "trombone hangs," in which trombonists spend time together playing together. Luke's relationship with the trombone has facilitated a variety of other relationships, for which he feels grateful.

Han

Han is a second-year violin performance major. He spent his first year at university at a competitive East coast music conservatory before taking a gap year and eventually coming to this university for his second year.

Developing and deconstructing an ego. Han described his development on the violin as the following: "I started off and hated it and did not work hard, then I started really liking it and still did not work hard and I started identifying with it and [feeling]

like I am a violinist and still did not work hard." Despite receiving a violin and violin lessons as a gift from his musician father, Han openly admitted that he absolutely hated it. He remembered crying about having to attend violin lessons as a seven-year-old, saying "every lesson just sucked." When I asked what made the experience so miserable for him, he laughed as he said "having my teacher expect me to learn." He said he never practiced but, thanks to attending his father's gigs as a rock musician, he has "a really good memory for music." Instead of practicing, he could memorize his music quickly and review it even when he was not practicing on the instrument. Practicing was difficult, he said, because he was not instantly gratified and he was not happy with the sound he could make. Although Han clearly was unhappy playing the violin, he admitted it "must have obviously mattered to me" because his father once threatened to pull him out of lessons, but Han wouldn't quit.

Han grew up in a musical family. His father, a guitarist, performed often and Han's mother would often take him to his father's gigs. Han told me that their social life revolved around the band, the music scene, and the fans and audiences who would follow the band. However, Han did not remember ever thinking he would be a performer himself one day or even particularly wanting to perform.

One strong source of motivation for Han was attending a Hilary Hahn concert when he was just nine years old. He saw Hahn as a role model and saw "what you can actually do with [the violin]." During our conversation, he laughed as he recalled that after that, "I got the great idea in my head that I would to that, that I would be like a concert artist, like a soloist, internationally acclaimed, and so that was kind of the goal, not music, but fame."

It took a few teachers to help Han break down that initial idea of fame. His second teacher, a highly trained violinist and martial arts master, helped Han focus more on music than "the weird idea of fame" that he had stuck with. He once told Han that he would practice 12 hours a day, and true or not, these stories had a positive influence on Han's growth. Han laughed as he said, "I am a pretty lazy person," and acknowledged that his teacher's stories really changed him.

Han's teacher also motivated to be in an environment where his peers are "just as good or better" than him. The first time Han ever had that experience was in high school at the equivalent of his state's All-State orchestra festival. He described this as a "turning point," and he remarked that "This was the first time I had ever been in a place with people who could outplay me any day." He suddenly realized that he could be playing in this environment all the time and decided to pursue music.

In high school, Han became known as "the school's violinist," consistently performing at talent shows and with school ensembles. During high school, he began feeling more comfortable with the violin and started to develop his identity as a violinist. He laughed as he acknowledged that he did not take it well at all and that he was "arrogant." Even by himself, he continued to live the persona of the talented, gifted violinist despite his teacher's influence.

However, entering conservatory helped Han begin to deconstruct his ego. Han's teacher during his first year of conservatory study "totally disassembled that egotistical thing," and even told him, "Look, if you want fame, go into the movie industry, it is much easier and much more attainable." Han worked more on listening with this teacher, thinking about breathing and how the sound he produces makes the audience feel. Han

described his own playing at that time, saying "I used to close my eyes and get really emotional when I played…but I did not focus on the sound I was producing at all." He also credited studio class and seeing top-tier soloists play every week for showing him what he saw as the very best of violin playing.

During a year off from school, Han continued to work on shedding his ego. He remembered a meaningful experience during a masterclass with a former concertmaster of the Berlin Philharmonic, in which Han played the Sibelius violin concerto. He described the encounter as follows:

> There is like a big shift at the bottom of the first page, [sings] it is really dramatic and I was doing some big flourish, like really getting up there, and he was just like, 'dude, no, just, just take your finger and move it. Put the violin up, move your finger.' And just that one moment, I like to think it dissolved the rest of that weird ego, 'I want to be famous' thing.

"Right then," he said, "I really started to focus." Rather than concentrating most on the performance, the "show" as Han called it, he began thinking more about the product he was creating on stage, the "tangible…work of art." At the time of our conversations, he was still working on breaking down his ego and maintaining focus on what he calls a "more desirable sound, more palatable sound" so that he can communicate ideas through music.

Self-teaching and freedom. Throughout our conversations, Han and I continued to return to what his goals for violin playing and music making might be. Ideally, he said, he wouldn't need to think about technique and technical problems. Before his turning points in high school and in conservatory, he said he would pretend to be Yo Yo Ma, "just rippin' through [stuff], and not really giving a care about sounding good." He described a disconnection between the sound the audience was hearing and the sound in

his head. His solution for bridging this disconnection is recording. During his gap year, he spent lots of time recording and-recording himself, always listening back to what sometimes was "not expressive," "gross," even "offensive." Suddenly, this "wake-up call" caused Han to realize that, in his words, he "sounded like a whiny teenager," "arrogant and out of tune." The disconnection between what he thought he was producing and what the audience heard became stark and real. He threw himself into intentional practicing, beginning to "choreograph" his physical actions to improve his sound. The biggest challenge, he said, was that "you cannot just shred whatever you want and expect it to sound good," but that "there has to be an element of control." He mentioned music legends Jimi Hendrix and Jean-Luc Ponty as examples of musicians who can "let go" while still performing at a high level, which Han attributed to having that level of control on the instrument.

Han has never experienced feeling like his violin was part of him, but he did say that "sometimes, I've thought of the bow like that" because it is "very physical." Sometimes he could play without "really thinking about bowing," "just moving it and making it do what I wanted it to do." He connected this feeling with the bow to high levels of tension, saying that he would "squeeze" the bow and "so then it felt like a part of my body because it was so solid, like it was not going to go anywhere." He did not think that type of playing was particularly beneficial, however, because he "definitely did not sound very good." He said that if he had learned better technique and habits, maybe that embodied feeling could happen again. With Han, every feeling of freedom within playing comes from hours and hours of preparation and precise control over his own playing.

Connecting and communicating. For Han, the violin is primarily a conduit between him and the audience; a means of expression for him on stage. This conduit helps him bridge the disconnection he sometimes feels between him and the audience. Sometimes, he said, he likes to view the violin "as a lens or a window," in which the violin has to "focus" the composer's intentions for the audience.

However, he does not consider the instrument to be entirely dead but, rather, he thinks "it has some sort of energy." Han presented the idea of dialoguing with the violin. "I do feel like I have to sometimes request sound out of it," he said, "and so in that way it is like having a conversation." He remarked that he can ask the violin to do something, "like asking it questions," and the instrument will "be completely truthful," and "it will give you exactly what you ask for." However, Han thinks that the instrumentalist has to "figure out how to ask it the right questions." "Through asking it the right questions you are expressing…the music through it," he said, and in this way, "it is like a person-to-person relationship." He recognized the relationships musicians have with their instruments, and "like a kid or a pet, you have to take care of it, and … you have to have kind thoughts about it, and then it will work with you."

Han's "ideal means of expression would just be not thinking about technique." He believes that a strong technical foundation is the "first step" toward expression. He recalled playing his instrument without a care for how he sounded, playing purely to express himself, but after he started recording his own playing, he realized how important the role of technique was in enabling expression. He described the discovery of a discrepancy between what he was hearing in his head and what he could hear from the recording, and as he recorded his own playing, he would work to assimilate what he was

producing with what he wanted to produce. In order to do so, he had to first be "more intentional" with his playing in order to eliminate the occasional discrepancy between what he wanted and what he had. He referred to his process as "choreographing" both his thoughts and actions, and the choreography helped make his vision for a piece of music the same as his performance of it. He said that he had "never differentiated" between what he thought and what he did before he began this process. The violin, thus, represented a way for Han to express himself, but it is not a perfect one. He could think he was producing one sound or expressing one idea, but what the audience heard might be different from what he was perceiving himself.

Finn

Finn is a cellist from Korea who started university study at the same Midwestern university a year before applying and being accepted to the music school. He is a sophomore, studying cello performance.

Difference. Finn has always considered himself an outsider in educational contexts. As the only student pursuing music in his international high school in Korea, he has felt different than his peers who mostly went into business or economics at top-tier universities. Finn did not decide to pursue music in college until he was a senior in high school. He described the cello as just a hobby until his teacher, a college professor in Korea, suggested that he go further in music. At university, he spent his freshman year as a generally admitted student outside the music school and became a music major during his sophomore year. This one-year difference also sets him apart from his peers, many of whom were directly admitted into the music school.

Even as a music student in the university context, Finn felt that his willingness to explore music outside of the repertoire of his major instrument sets him apart. He regularly listens to the music of who he considers to be an under-played composer. In our first interview, he remarked that if you ask who his favorite composer is, he cannot begin to answer the question because the answer changes almost every day. "Yesterday, it might be Rachmaninoff," he explained, "today, it might be Poulenc." We both laughed, noting the rarity of a person affirmatively naming Francis Poulenc as their favorite composer.

Finn talked about Western classical music with great familiarity and often referred to composers and pieces he has encountered just by happenstance. He mentioned *Etude Tableau* by Sergei Rachmaninoff, a piano piece he rates as a great work. He seemed almost sad, however, when he explained that outside of pianists, "there is a greater chance that no one will ever know that piece" despite the fame of the composer. For Finn, the great body of Western classical music is a source of perpetual exploration and discovery, and he hoped that his explorations will encourage other musicians to do the same: "it is all about encountering the new work and spreading it to others."

Performing life and listening life. Finn experiences music in two arenas: performing and listening. As a performer, he is producing the sound, and as a listener, he is receiving the sound. He noted that while you are playing, "sometimes you cannot necessarily listen to it because there is something going on here," and he pointed to his head. He stated that listening, on the other hand, is totally different because listeners are not in the performer's head. Finn gave the example of a recent chamber music coaching. His coach said that the tempo in the slow movement was dragging and stagnant, which

Finn did not understand because "I thought it is a slow movement, very pastoral and you know very peaceful and it just flows like a river." But when his coach played the piano with the group, "it was actually amazing that, how that in such in a slow tempo, we could still feel this motion." As a performer, Finn was experiencing the movement differently than his listening chamber music coach. He remarked that "playing doesn't necessarily make you become a better musician," but "it is all about the interplay between your mindset of being a performer and also a listener." Finn also emphasized the role of listening in improving one's playing. He remarked that no matter how advanced one's technique may be, "the listener won't care, he just listen[s] to the outcome" because "unless they are a cellist, they do not understand the amount of effort that I put into this ten minutes of work." It is "crucial to know your sound," he said, to understand "what will be delivered to someone other than you."

While music study on the cello involves a focus on cello-specific repertoire and technique, Finn also spends considerable time listening to music. When he comes to lessons, he not only brings his own part, but also the entire piano accompaniment and score in his head. Finn also engages in mental practice, in which he actively listens to a piece, focusing on the cello part, and imagines playing the music. He doesn't do this just with his own repertoire, but for pieces he has not played and is not planning to play in the near future. For Finn, listening informs performing just as performing informs listening, and both activities inspire and influence his musical life.

Choosing the cello. Finn's choice to come to the cello was constricted by the limitations of local resources. When he was nine years old, his parents asked him to choose an instrument to study privately in Korea, but the only available teachers in his

town taught violin, cello, and guitar. He did not like guitar and violin, and while the cello was not a "bad choice" for him, he recalled thinking of the cello as, "just a big instrument." When I asked him to imagine what he might have chosen as a child if he had more options, he couldn't answer, saying "I cannot imagine living without [the cello]."

In high school, the cello was a relief for Finn. The cello helped him through difficult years in high school, when he spent his time either studying or practicing. Despite being different from his peers in his choice of university study, he clearly felt a strong, positive connection to music and the instrument. He remembered experiencing distractions that "tried to separate" him from the cello, but he said that this this type of atmosphere actually strengthened his focus on music.

When I asked Finn how he decided to become so serious about the cello, he immediately gave credit to his teacher. Finn's private cello teacher was a source of great inspiration for Finn to continue music. His teacher was not only "really good as a player," Finn recalled, but he also had "such a great personality." Finn remembered thinking as a young student that "I could be like him."

From our conversations, it became clear that Finn has only become more serious about music and the cello during university study. While at first the cello was a hobby, Finn developed a more serious focus on pursuing cello like many other musicians. His first year in music school reinforced his interest and love for classical music, even music outside his own repertoire. Our interviews involved lots of singing, many references to musical works from all genres within classical music, and we once even listened to music during our interview to better inform our discussion. Overall, while Finn may be a cellist, his first and foremost love is for listening, performing, and sharing music.

Breaking through the wall. Finn's primary struggle in music has centered around what he called "the wall." In performance, he feels as if there is a wall between him and his audience, which he must surpass in order to communicate with the audience. The ability to break through that wall is "an ultimate goal," and it is "what distinguishes between professional musicians and a person who just graduated," he said. In our conversation, he used the word "synchronize" to describe that feeling of being able to play anything with ease. When I asked him if he considered the cello to be part of him or a separate musical partner on stage, he agreed more with the instrument being a partner and recognized that the person and the instrument "are different parts." He spoke of "compromising" with his cello, because his cello is imperfect and not everything sounds precisely how he would like. Certain limitations of the cello, along with his own technical limitations, require him to synchronize and compromise with his instrument in order to facilitate a connection to the audience.

When I asked where the cello sat in relation to that wall between himself and the audience, Finn told me that the cello *is* the wall. Since technical errors may disrupt the performer's connection with the audience, the inherent difficulties in accomplishing certain repertoire contribute to the wall between the cellist and audience. Other variables during a performance also affect the wall, including things like the endpin height, the location of the performance, even having a headache while performing. However through practice and understanding of the instrument, one can make the wall shorter, thinner, and less substantial, helping the performer communicate and connect better with the audience. During a performance, Finn would ideally be able to play any passage of any

difficulty with comfort, and "that is the moment when you can say you finally got over…the wall."

Finn's assertion that the cello is the wall could suggest a feeling of disunity or, using Finn's word, lack of "synchronization" with his instrument. If the cello were a dead piece of wood, the blame for error in performance would fall entirely on the performer; however, Finn experiences performance as a joint effort between two partners who may at times pull apart from one another.

Finn also considers his cello to be a mature partner, and their relationship requires understanding of each other. He "needs to understand his cello to produce the best sound," and he laughed as he tried to describe his cello understanding him. His cello understands him, he said, "by me synchronizing with cello." Synchronizing and understanding the cello help him get over the wall between him and the audience, and the cello simultaneously partners with him to connect, and prohibits him from connecting with the audience. For Finn, the cello is dynamic and requires mutual understanding in order to successfully communicate with the concert audience.

Finn's cello also presents challenges for his playing. Part of what he does with his instrument, he said, is compromise with what the instrument can and cannot do. His cello is young, only seven or eight years old, and he compared the instrument growing over time to a child who needs direction and supervision. "They are a baby, basically," he said, speaking of his cello, "they do not know what to do, they do not even know how to make the sound, so we have to help it." Buying better equipment, like strings and bridges, helps the instrument grow in a "more sound way." He said that the cello itself could be an obstacle to finding a good tone, which can be overcome by compromising with the

instrument. Finn sees his instrument as changing and growing, just like a person, and feels compelled to compromise with it, not control it, in order to express himself the way he wants to.

Ben

Ben is in his second year of a cello performance major and viola de gamba minor. He took two years off from school after his freshman year to go on a religious mission, and now he has returned for his second year.

Modern cello and viola de gamba. Like many students, Ben started as a young piano student whose parents suggested he start another instrument, and after seeing the Chicago Symphony Orchestra as a nine-year-old, he fell for orchestral music. His mother, a concert pianist, got him a violin, which he "hated" and only played for about six months. His parents asked him to choose a different instrument, and he was not sure exactly why he chose the cello. "It just worked a lot better for me," he said, since he found violin position very uncomfortable and "cello was much more natural." The more he played, he said, "the more in love with it I became."

Growing up, Ben did not have many experiences that pushed him to be a better musician. When we talked about choosing to pursue the cello in college, he mentioned that he "wanted to be surrounded by people that would push [him]." The only exposure he had to that kind of environment was a workshop for baroque music, where he studied viola de gamba. Ben had seen his mother perform a baroque concert with harpsichord and viola da gamba when he was in the ninth grade, and while the gamba looked similar to a cello, the instrument sounded different to Ben. At the baroque music festival, Ben had the opportunity to play with a "really good group," which made him want to continue to

pursue music. Now that Ben is in conservatory, he loves chamber music and playing with other people on both cello and viola de gamba. Chamber music is special, he said, because it allows for communication within a small group of people, and everyone is "in the spotlight, but not really, you are sharing it." He described playing chamber music as the perfect balance, because "I like to be heard, but I also do not like to be alone."

Finding a voice. Ben is calm and soft-spoken and, despite the loud environment of our interview setting during the lunch hour, never raised his voice over the commotion. During our conversation, he chose his words carefully and paused often to think about the questions I asked and to compose his answers. He described himself as an introvert, quiet, and as a person who has a hard time expressing himself in words.

In the ninth grade, Ben's orchestra teacher gave him the opportunity to be a soloist with the junior high orchestra, which was incredibly influential for him. He described it as "the scariest thing I've ever done," but remarked that "it was beautiful" and that he had "never felt anything like that." When I asked him what he chose to perform, I was surprised to hear that he played "Song of the Birds," an arrangement of a traditional Catalan song by cellist Pablo Casals. Being a cellist myself, I found this program choice especially informative. "Song of the Birds" is an important piece for cellists, as it was played as an encore at nearly every concert Casals performed, but the music itself is not particularly soloistic for the cello. Since Casals arranged the piece from a song, it is slow, entirely melodic, and very lyrical, while many cello concerti performed by soloists can be loud, bombastic, and technically difficult. The text of "Song of the Birds" recalls the birth of Jesus Christ and describes nature's response to the Nativity, giving the piece religious overtones. The piece also has political connotations, since

Casals played it specifically as a protest to the Franco regime in Spain. This choice of repertoire, given its vocal nature, historical background, and significance for the world of cello-playing, helped me understand that Ben's approach to the instrument may be different than other cellists.

For Ben, music is a way to express himself without relying on words. "Cello has always been that way for me to express emotions and connect with people in a much deeper way," he said. The cello and the viola da gamba are his voice, he said. Ben described the cello as "not the loudest instrument out there," which he appreciates. "I like things are beautiful but not completely in your face…I think the cello's a really good balance of that," he said about the cello. When I asked him to imagine picking another instrument, he mentioned the marimba as an instrument he enjoyed, particularly because "that is also kind of a similar timbre." Ben also described some of the qualities of the viola da gamba that he enjoys. The gamba, he said, is "almost closer to a voice" than other instruments. "A lot of what we do on gamba is imitating the voice. You are trying really hard to sound as much as you can like a voice."

Adventuring. Ben sees his musical life on the cello and viola da gamba as an adventure. On this adventure, he is "exploring" new things, which he finds more invigorating with the gamba than the cello. Since he has been playing the cello longer, he finds it more familiar but on the gamba, "there is a lot more, and there are a lot of sounds that you cannot get out of a cello that you can on the gamba." He acknowledged that since he is newer to the gamba, he finds new things more often than on the cello, where "the steps are bigger and further apart." While Ben gets excited when he "find[s] something new," he is "not really sure what [he is] looking for."

As we spoke, he started constructing metaphors and analogies to get to the heart of this adventure. The map for this adventure has not been filled in yet, but "if you are standing somewhere and you look out in the distance, you see this huge landmark and you have no idea how to get there." While each landmark on this adventure is a desirable goal, Ben said that there is not a clear path toward those goals and sometimes, he doesn't even know what direction to go in. Sometimes, he said, he even goes backwards, repeating old repertoire with the same mistakes he made when he first learned it. I asked him where the cello might be in this analogy—is it one of the goals, is it another character on the map, is it the map itself, is it one of the places you are trying to reach? "I feel like it is the thing that brings you to those places," he said, and, laughing, brought up two characters from Super Mario World. "I guess if you think of it like a video game, could it be a character like Yoshi," he wondered. In Super Mario World, the player plays as either Mario or Luigi and rides around on Yoshi, an anthropomorphized dinosaur-like creature. Continuing the video game analogy, Ben remembered playing a game where "you control two different characters at the same time, and you have to use both of them working together to get through the game," noting, "that kind of feels right, it kind of feels like the relationship between me and my cello." In this adventure metaphor, the cello is not a dead object solely manipulated by Ben, but rather a companion on a journey with whom he must work to achieve his goals.

Ben's cello is more of a person to him than an object. In fact, "there are things that it does that I cannot control," he said. Ben's cello even has likes and dislikes, he said, laughing as he described his cello's "hatred" for the state of Indiana. The cello has never felt like an extension of himself; rather, "it is never really felt like me, it is always been

its own thing." He feels as if "most of [his] instruments have always just had a mind of their own." I asked him to imagine playing another, older instrument and asked if he would still have that feeling, and he said that "everything I've played" has had its own agency. Sometimes you can do what you want on the instrument, he said, but other times you "just have to do what it wants." No matter what he does, certain notes just won't sound the way he wants on the cello, and the viola da gamba even more so, since it "changes constantly" with fluctuations in weather.

Ben has noticed limitations on every instrument that he has played. "Every instrument has a different limit and you have to find that and figure out how to work within that," he said. His own cello has a wolf tone, a note that matches the resonating frequency of the instrument and produces an undesirable sound, that changes week to week and is "never really predictable." During our second interview, he was exasperated by the sudden appearance of a wolf on every E-flat on his instrument. He said it sounded the worst while practicing scales, and that he could usually work around it while playing repertoire. These limitations are a source of frustration for Ben, and he said that he has to spend time figuring out solutions to the problems his own instrument presents. His cello, made in 2004, is relatively young for a string instrument, and Ben has noticed change over the past several years he is owned it. He connected this change to his own personal growth, saying, "I change as a person with time" just like his instrument does.

While he is separate from his instrument, they still have to work together on stage. Rather than being static and completely controlled by Ben, the cello is Ben's partner in music making, like a great chamber musician.

Relationship of Findings with Theory

Dialogic self theory suggests that the self is "an on-going conversation of voices" (Lysaker, 2011, p. 524) that is itself constructed through the relationships it forms with others. The findings of this study strongly represent the role of the musician-instrument relationship in crafting the selves of the participants. The participants' identities were shaped by their relationships with their instruments, rather than simply by their general involvement in music.

Participants, in general, viewed their instruments more as people than objects, indicating that their relationships were closer to I-Thou than I-It relationships. In an I-Thou relationship, both people or objects in the relationship are changed, whereas the didactic I-It relationship does not involve mutual shaping (Bresler, 2006). The findings of this study suggest the presence of a "Thou" in the musician-instrument relationship, wherein the instrument becomes "Thou" rather than "It."

Relational capacity, or the ability and need of human beings to connect with others, is central to this exploration of relationships. Humans are relational beings, and the musicians' relationships with the people around them have been explored in other contexts, including student-teacher relationships (Gaunt, 2011; Hays, 2013; Persson, 1995). This study shows that these musicians do have the capacity to form relationships, not only with the people around them, but also with the inanimate objects with which they share their lives.

Themes across Participants

No participant described their instrument as a dead, static object that could only be manipulated by an instrumentalist. Rather, participants discussed their instruments like

people. They considered their instruments to be changing, dynamic, and imperfect, and some even described their instrument as having personalities of their own. Instruments were like musical partners and even life partners, and participants described dialoguing and working with their instruments during practice and performance.

Many participants discussed the concept of limitations when talking about their instruments. In our conversations, we discussed the ways in which instruments could have limitations which change the way they function in musical contexts. Primarily, the participants described instruments as being limited by their physical design and shape. For example, Rey talked generally about the viola being acoustically imperfect because of its size and both Finn and Ben shared the difficulty of working with the idiosyncrasies of specific instruments. These limitations influenced each participant's relationship with their instrument slightly differently. No literature has addressed the attribution of musical limitation to instruments in the context of instrumental music education.

For some participants, their instruments were related to personality types. Rey found that her personality matched the "personality type" of the viola. Rey did not refer to a typical "violist" personality, but rather the personality type of the instrument itself. She considered herself to be an introvert, which she saw as aligned with the viola's dark and covered sound. Ben felt that his personality also matched the typical cellist personality, which he characterized as serious and thoughtful. Luke considered his extroverted and open personality to be common among trombone and brass players and he felt that personality contributed to the social element of trombone playing in his musical life.

This finding supports in part previous research by Cutietta and McAllister (1997) addressing personality type and participation in instrumental music. Cutietta and McAllister administered one personality measure to 668 instrumental music students in grades seven through 12 to investigate potential patterns in personality types. Results showed that in general, middle school students involved in music did not differ considerably from the normed population and there is no propensity for a certain personality type to begin participation in music. Cutietta and McAllister did find that there was a trend "toward homogeneity of personality type among students who choose to continue" (p. 290) in high school instrumental music, but they found no evidence to suggest that personality type influenced continuation on *specific* instruments. The findings of Cutietta and McAllister contradict Bell and Cresswell (1984). Bell and Creswell administered a different personality measure to both college and high school instrumentalists in order to determine differences between personality types of musicians and the normed population. The results showed considerable differences between those two populations, suggesting that personality types of students influence their participation in music. However, no research directly addressed how personality types might be attributed to different instruments.

Many participants discussed the development of a musician identity or an identity specific to their instrument (e.g. "violinist"). Success in music often contributed to the development of a musical identity. For some participants, the instrument was integral to their identity as an instrumentalist, not just a musician. Han's identity as a violinist contributed to the ego he built and worked to wear down, and that identity went beyond

being simply a "musician." Luke strongly identified himself as a trombonist and considered his identity to be heavily influenced by his instrument.

Previous research on identity in music education has addressed identity formation in teachers (Roberts, 1991; Dolloff, 1999; Isbell, 2008) and non-musicians (Lamont, 2011). Hargreaves and Marshall (2003) addressed identity in general music students in elementary school as well as music teachers. They determined that young music students' engagement in and motivation for music is influenced by the ownership they experience of their music making. This sense of ownership contributes to their development of an identity as musicians; Hargreaves and Marshall write that "thinking of oneself as a musician can be an important step on the road to becoming one" (p. 272). The findings of this study in part support the conclusions of Hargreaves and Marshall, but previous research has not yet addressed how a musician's instrument-specific identity might develop.

Agency in instrument choice was another prevalent theme in each participant's narrative. Many of the participants started playing at relatively young ages and did not choose their instruments themselves. Instrument choice was largely parent-directed and arose from a variety of sources: culture, family life, a general desire for the participant to participate in music. Only one participant directly chose to participate in music himself and was relatively free to play whatever instrument he chose. Participants did seem happy with their instruments at the time of the interviews, although many recalled being initially unhappy practicing and taking lessons on those instruments.

Luke's story stands out among participants, as he was the only person who never mentioned a parent requiring him to take any kind of music lessons. Rather, he was so

influenced by his older brother's experiences in band that his choice to take up the trombone was highly tied to his brother's experiences. While he specifically chose the trombone after being unhappy trying other band instruments, Luke may have never come to the band classroom in the first place without the influence of his brother. Additionally, his choice to pursue trombone came after positive encouragement from the band director, who already knew his brother and who did not let Luke give in to disappointment after trying reed and percussion instruments. Luke's choice to play the trombone was made independently of his parents, although he was influenced somewhat by his band director. The choice to participate in music in general was influenced not by explicit parental direction but by seeing his family members participate in and enjoy music.

Previous research in instrument choice has examined a wide variety of influences including gender and sex-stereotyping (Abeles & Porter, 1978; Abeles, 2009; O'Neill & Boulton, 1996), preference for timbre (Fortney, et al., 1993), and parent involvement (Davidson, et al., 1996). Gender was a factor in instrument choice for just one participant; the four other participants did not raise issues of gender in their interviews. Rey's mother chose the violin for her and the flute for her sister due to their classification as a feminine instrument, which aligns with the gender stereotypes presented by Abeles and Porter (1978) and Abeles (2009). Of all five participants, there were none who crossed gender stereotypes as described in Abeles and Porter (1978) and Abeles (2009). Only one participant was female, and she was also the only participant to bring up gender in our interviews. A longitudinal study of instrument choice might inform researchers how the other participants who did not mention gender in the interviews for this study may have been influenced by sex-stereotyping.

Chen and Howard (2007) investigated a wide variety of background factors in instrument choice. They surveyed 156 college students in undergraduate, graduate, and diploma programs studying music at five different colleges and universities. Among other factors, Chen and Howard identified parental support and home environment as influences on student's choice to participate in instrumental music. The findings of Chen and Howard are supported by the findings of this study, which indicate the importance of family in instrumental music participation. This study also supports the findings of McPherson and Davidson (2002) and Feintuch (1983) as described in Chapter Two, both of which emphasize the importance of parental involvement and home environment in a student's musical development.

Every participant has had access to and participated in music education. However, some participants discussed their experiences in those educational contexts more than others. Overall, individual teachers overwhelmingly seemed to be the strongest influences on participants continued involvement in music.

Luke knew the middle school band director through his brother, but their teacher-student relationship started during the instrument demo night. From that encounter on, Luke's band director provided consistently positive learning experiences that reinforced Luke's interest in trombone playing. He encouraged Luke to take an audition for the honors band, reassuring him that placing in a lower band would still be okay. The atmosphere he created allowed Luke to flourish as a trombone player, and Luke's passion for teaching was partially inspired by that positive environment.

Rey also had encouraging experiences with teachers. Her second teacher increased her motivation by setting standards for practicing, which she credits for her

improvement during that time. This teacher encouraged her to audition for all-state orchestra, an experience which cemented her self-belief as a musician. She mentioned wanting to emulate him as best she could. Finn also recalled wanting to be like his teacher, his only cello teacher in Korea before he started university in America.

Several researchers have examined the relationships between students and teachers (Gaunt, 2011; Hays, 2013; Persson, 1995). Gaunt (2011) explored the one-to-one relationship in the conservatory context by interviewing part-time music tutors and their students, and results suggested that the student-teacher relationship had a "major impact" (p. 174) on student perceptions and learning. Hays (2013) interviewed 15 college music teachers about the mentorship relationship between teacher and student and found that, among other things, this relationship helped develop students' self-esteem, sense of self, and confidence. Persson (1995) did a naturalistic case-study of seven studio teachers and 47 of their students and emphasized the importance of a positive, supportive relationship between students and their teachers. This previous research supports the finding that student-teacher relationships were important influences on student musicians' musical experiences.

Very few participants described experiencing their instrument as connected to their body, but many were familiar with the phenomenon. Ben and Luke considered their instruments to be their voices in a metaphorical way. Han's bow, not his violin, is the only part of his instrument that he's felt a physical connection with. In one way or another, every participant described their instrument as a means of expression, a conduit between them and the audience through which they could communicate personal feelings and ideas. However, some participants could not simply play expressively automatically.

Rather, they described needing to develop and build some kind of mastery of the instrument before their attempts at expressive playing could reach the audience.

As opposed to being a means of connection, the instrument also represented a form of disruption between performer and audience. Finn used the visual metaphor of a wall to conceptualize how he experiences disconnection from the audience while performing. This wall appears to represent the countless elements that disrupt his performance, which include technical deficits that prevent him from accomplishing difficult passagework. Just as one can get out of sync with a fellow performer, falling out of tandem with an instrument is possible, and both scenarios would disrupt a connection with the audience.

Chapter Five: Summary

This study explored the relationships that first- and second-year music performance majors have with the instruments they play. The research questions as presented in Chapter One are as follows:

- How do these music students' relationships with their instruments develop?
- What role do these relationships play in these music students' life stories?

Data were collected by using semi-structured interviews, and both researcher and participant aided in the construction of narratives that reflect each participant's life story. Cross-participant analysis revealed and compared emergent themes from each participant's narrative.

The relationships of these participants with their instruments developed as they became more involved in music. For some participants, being active in music led to strong identities with their instruments (e.g. being a "violinist" rather than a "musician"). Some participants described having a relationship with an instrument in general, such as "the viola" rather than a particular viola, and others felt a connection to their instrument specifically.

Many participants viewed their instruments more like people than objects. Participants found their instruments to be like human partners who are dynamic, collaborative, and imperfect. Instruments were seen as partners on a journey, musical collaborators, and beings who need to be nurtured and cared for like human beings. Some participants described being in dialogue with their instruments, asking questions and getting answers like a human conversation. Instruments presented participants with opportunities to be expressive as well as challenges to produce the most desirable type of

expression through technical mastery. Despite some participants discussing instrument-specific technique at length, they did not present the instrument as a dead object that could only be manipulated.

Revisiting the Literature

Much of the literature addressed in Chapter Two is quantitative in nature, while the methodology and results of this study are qualitative. Qualitative research findings can speak to quantitative research findings by providing supporting, clarifying, or complicating data from a fully contextualize individual experiences. As such, qualitative research findings can provide some evidence of ecological validity to findings determined through prior quantitative research investigations.

Only one participant directly addressed issues of gender in the interviews. Rey's mother required her to choose an instrument associated with femininity. This finding corroborates the sex-stereotypes identified by Abeles and Porter (1978) and Abeles (2009). No participant played an instrument that was strongly associated with a gender other than their own. One male participant did play violin, an instrument with a feminine association, but Abeles (2009) did note that male students were slightly more likely to choose a feminine instrument than female students were likely to play a masculine instrument. Four of the five participants were male and no male participant mentioned gender. A future longitudinal study may be useful in understanding the interplay of gender, agency, and musical choice.

Cultural value appeared to be a direct influence on two participant's musical life stories, but not as specifically discussed by Dawe (2003), Cope and Smith (1997), and Abril (2009). One participant started piano lessons at a young age because it was

common and valued in her mother's country of origin, and another was the only student in his high-achieving, international high school to pursue music, a profession with lower social status. The participant's culture was more tied to how they came to music in the first place, rather than how they thought of their instruments (Dawe, 2003), the larger social context of their music learning (Cope & Smith, 1997), or issues of multiculturalism (Abril, 2009).

No participant directly discussed socio-economic status as a factor in their musical life (Albert, 2006; Corenblum & Marshall, 1998; Klinedinst, 1991; McCarthy, 1980). One participant mentioned initially not buying a particular instrument because of price, but he did return to purchase the instrument later. It is important to note that this study took place in a highly competitive university that charges high tuition rates for out-of-state students. Admission to this music program also requires a high level of musical ability that is often nurtured in private lessons, which are an additional financial expense. The general population of this music program then may not have had a wide socio-economic diversity.

Home life was prevalent in the life stories of three participants. Han's father was a professional gigging musician and Han spent his childhood surrounded by music. Luke saw his older brother go through band programs and enjoy music, which heavily influenced Luke's interest in band. Ben saw his mother, a concert pianist, perform with a viola da gamba, and that experience introduced him to the viola da gamba and influenced his interest in playing it. This finding in part supports Feintuch's (1983) description of one musician whose home life was a profound influence on his continued participation in musical activities. Parental involvement in music lessons, as addressed by Zdzinski

(1992) and McPherson and Davidson (2002), did not appear to be important themes in participants' life stories.

None of the participants in this study discussed experiencing issues with performance anxiety. The findings of this study did reflect certain elements of instrumental genesis as described by Rabardel (1995) and Verillon and Andreucci (2005). Participants' stories displayed elements of this process as participants took time to become familiar with their instrument ("it's just a hobby") before their instrument was instrumentalized. While musical instruments are designed to produce sound, participants appropriated their instruments to an outside context (Verillon & Andreucci, 2005, p. 412) by using them as means of personal expression and communication. Participants ascribed non-physical qualities and attributes to their instruments, such as personalities as well as likes and dislikes. The musician-instrument relationships explored in this study were not didatic or "I-It" but rather reflected elements of an "I-Thou" relationship.

While some participants were familiar with the concept of embodiment, few had ever experienced their instruments feeling like part of their physical bodies. One participant reported feeling a physical connection with his bow, but not his violin. Two other participants spoke about their instruments being their voices. It was not clear whether the participants were speaking metaphorically or literally, and unfortunately, time did not allow for a deeper discussion of this idea.

Interestingly, participants did not exhibit or discuss a mind-body connection, but rather, their language infers that they may consider music to be a different activity than physical action. Their frequent references to the limitations of their instruments indicates that they may be consider their instruments to be completely separate from themselves.

The findings of this study do not clearly explain how the musician-instrument relationship interacts with Richerme's (2015) "integrated whole" (p. 83), but they do address some of the processes raised by Njis, Lesaffre, and Leman (2009). Nijs, et al., argue that spontaneous and natural musical performance is only possible with body-instrument integration, wherein the instrument disappears from the musician's consciousness during performance. In this study, however, participants formed person-to-person relationships with their instruments and did not express the disappearance of their instrument. These "I-Thou" relationships would not be possible if one agent in the relationship disappeared. For participants, their instruments were limited, imperfect, musical partners that did not disappear during embodied experience.

No participant spoke about experiencing a serious injury, despite the literature indicating the high prevalence of performance injury (Fishbein, et al., 1988; Fry, 1986; Fry, 1987; Ranelli, Straker, & Smith, 2008; Spahn, Strukely, & Lehmann, 2004). One participant did speak about his instruments being injured or damaged in some way. Luke seemed more concerned with his instrument's physical well-being than his own, demonstrating one element of the caring relationship he has developed with his instrument.

Similarly, professional well-being did not appear to be a prevalent theme among participants. Participants did describe a variety of musician-instrument relationships related to, but not perfect fits for the four types provided by Simoens and Tervaniemi (2012). Simoens and Tervaniemi's four musician-instrument relationships were the following: "so united with my instrument/voice that there is no difference between us," "it's really me as a person in front of the audience rather than my instrument/voice,"

"protected/hiding behind my instrument," and "my instrument is an obstacle to overcome between me and the audience" (Simoens & Tervaniemi, 2012, p. 174). Some participants described these types of relationships when talking about their instrument, specifically the "united" and "obstacle" relationships. Other types of relationships described by participants included thinking of their instrument as a partner or as a conduit between themselves and the audience. These findings presented new types of relationships that should be explored further in future research.

Implications for Future Research

The identified themes prevalent in the data of this study could further clarify the elements of music students' relationships with their instruments and investigate the interactions of these elements with music students' learning experiences. The musician-instrument relationship and the elements at play in that relationship may influence how a student progresses through lessons or performs on stage.

Researchers might replicate Simoens and Tervaniemi's (2012) study about instrument relationships and musician health. Simoens and Tevaniemi surveyed musicians about their mental and physical health as well as what kind of relationships they had with their instruments. That study could be replicated with additional relationship paradigms that were introduced in this study, such as "my instrument is a partner" or "my instrument is the way I communicate with the audience." Additionally, future researchers might survey professional musicians about the types of relationships they consider to be healthy and beneficial.

Simoens and Tervaniemi's (2012) four instrument-relationship types may also be indicative of a musician's development over time. As they mature, musicians may

experience their relationship with their instrument differently. For example, young musicians could initially experience their instrument as an obstacle but, over time, come to see their instrument as united with themselves; this development from "obstacle" to "united" was reported by one participant in this study. Future research may investigate how the musician-instrument relationship changes over the course of a young musician's development from novice to expert.

Future research could address the issues of instrumental genesis as described by Rabardel (1995) and Verillion and Andreucci (2005) incorporating the apparent personification of instruments by participants. Rabardel and Verillon and Andreucci do not include personification in their discussions of instrumental genesis, but researchers might investigate where personification happens in the process of instrumental genesis. A longitudinal, phenomenological study may answer these questions.

Research on music students' relationships with their instruments could be connected to research on other musician relationships. Previous research has examined the relationships between music students and their teachers (e.g., Gaunt, 2011; Hays, 2013; Persson, 1995) and between music students and their families (e.g., Dai & Schader, 2001; Su, 2013, Kushner & Kushner, 1971). Future research might examine how the musician-instrument relationship functions within other relationships in the life of a music student.

Future research may also address the apparent gaps in the literature as identified by the results of this study. No studies have been found that explore student perceptions of instrument limitations and the effect of those perceptions on music learning. More research is needed to explore personality types of specific instruments (e.g., the "viola

personality"). Longitudinal studies on the musician-instrument relationship might uncover how this relationship impacts self-perception and identity, as instrumentalists develop during their formative years. For example, some participants looked to their family as models for music-making, and one participant's gender influenced her choices in instrument study. Some participants felt strongly about their identity as performers on specific instruments (e.g., a trombonist). More research is needed to understand how that instrument-related identity develops over time, as there appears to be an interplay between instrument choice, personality, and identity.

Finally, researchers may want to investigate what instrumental music teachers themselves think about musician-instrument relationships and what they might consider to be a healthy relationship between a young musician and that person's instrument. Surveys administered to these teachers might ask about which types of musician-instrument relationships teachers find beneficial and which relationships teachers might recommend. Certain teachers might encourage or discourage their students from forming a particular type of relationship with their instrument, which would influence the development of that student's relationship with their instrument. Interviews may also provide rich data about how teachers navigate the development of this relationship in their students.

Suggestions for Practice

This study provides a model for a potential teaching tool that would help instrumental music teachers better understand their students. The results indicated that there is a very complex, multi-factored relationship between a young performer and their instrument. Instrumental studio teachers may want to consider conducting similar

interviews with their students in order to understand how their students relate to the instruments they play. Since the musician-instrument relationship may influence how students feel about music-making, studio teachers should try to understand these relationships as best they can. For example, teachers who emphasize technique may want to consider the importance of expression in their students' musical lives. Participants emphasized expression as a primary outcome of their relationship to their instrument, not technical mastery. Knowing that students consider their instruments as means of expression may inform how teachers structure lessons. Teachers could reflect on the balance of emphasis on expression and technique based on how their students think of their instruments.

Studio teachers should investigate their students' attributions of limitations to themselves, their instrument, or both. They can address these attributions in teaching by discussing how to work through the student's limitations, as well as how to overcome their instrument's limitations. Studio teachers must also play on their students' instruments in order to properly gauge the instrument's limitations for themselves.

Some participants experience their instrument as a changing, dynamic being. While the instrument may physically remain consistent, student perceptions of it may be quite different. Teachers should consider that student perception of the instrument could influence their practice and performance capabilities. Similarly, most participants see their instruments as people, not objects. Emphasizing the physical manipulation of the instrument may be insufficient for teaching students how to perform *with* an instrument, not simply *on* an instrument.

Final Thought

This study was rooted in the idea that teachers must learn to understand their students as multi-faceted, complex selves. Students' selves are continuously changed by the relationships they form with the people and objects around them, and the more teachers understand the process of this construction of self, the more they can care for and truly teach the student's *whole* person. As music study becomes increasingly competitive, understanding of and care for the student must be paramount. The future of music research and pedagogy should continue to promote this understanding and care so that students can fully realize their musical potential.

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Appendix A: Recruitment Email

Dear [Student name],

My name is Mercedes Lysaker and I am a second-year graduate student in the Music Education Department here at Indiana University. I am conducting a research project about instrumental music students' relationships with their instruments, and I would like to invite you to participate in this study. Participation in this study will involve a series of 3-5 interviews over the course of the fall semester as well as optional submissions to a private online portfolio.

To qualify for participation in this study, you must be a first- or second-year undergraduate student majoring in music performance (BM).

If you meet these criteria and are interested in participating, simply send me an email at mlysaker@indiana.edu.

Best,
Mercedes Lysaker

Appendix B: Demographic Questionnaire

Name: _____

Age: _____

First or second year of college study: _____

What instrument do you currently study here as your major?

How many years have you studied this instrument?

Do you play other instruments? _____

If so, what instruments do you play?

Appendix C: Portfolio guidelines

Thank you for participating in this study! To access your online portfolio, visit [WEBPAGE] and set up a user-name and password.

This portfolio is intended to be a creative space for you to add items to supplement and build on content covered during the interview process. Some types of items you can upload are:

- Photos
- Visual art
- Prose (written by yourself or other authors)
- Quotes from books, movies, and other media
- Video recordings of yourself or others
- Links to other online content

Feel free to post as you like, adding new concepts that we haven't discussed during interviews or posting content related to something that came up in an earlier interview.

Please limit your portfolio contents to items that are relevant to your musical study, performance, and instrument. If you post content that you didn't create yourself, be sure to include the original source for the content. Make sure the items you post are professional and appropriate to the scope of the study.

You are the only person who can edit and upload content to your personal portfolio. I am the only person who can view your portfolio, and your content will not be available to the general public or other participants in the study. All portfolios will be destroyed at the conclusion of the study.